Appendix A
Environmental Commitments and Minimization Measures

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This appendix summarizes environmental commitments and minimization measures for the 2010-2011 Water Transfer Program. Section 2 of the EA presents environmental commitments and Section 3 of the EA includes an evaluation of environmental effects and associated minimization measures.

A.1 Environmental Commitments

- Transfers will be made in accordance with all applicable sections of the California Water Code.
- Transfers involving conveyance through the Delta will be implemented within the operational parameters of the Biological Opinions on Continued Long-term Operations of the CVP/SWP or any restrictions in place the time the transfer occurs.
- Sellers will be required to maintain flows at the downstream end of their distribution system under the Proposed Action to minimize potential water supply effects to neighboring and downstream water users.
- Water transfers under the Proposed Action will be implemented in accordance with meeting flow and temperature requirements on the Sacramento River.
- Well reviews and monitoring and mitigation plans will be implemented under the Proposed Action to minimize potential effects of groundwater substitution. Well reviews, monitoring and mitigation plans will be coordinated and implemented in conjunction with local ordinances, basin management objectives, and all other applicable regulations. Reclamation and DWR have published draft technical information related to cropland idling/shifting and groundwater substitution transfers titled Draft Technical Information for Water Transfers in 2010. This information is available at http://www.water.ca.gov/drought/transfers/.
- Carriage water necessary to comply with water quality objectives in the Delta will be assessed for each transfer involving conveyance of transfer water through the Delta. Reclamation has incorporated this

measure into the Proposed Action to continue with standard CVP and SWP operating procedures.

- The water transfers in 2010 and 2011 will adopt the cropland idling conservation measures in the 2009 Drought Water Bank Biological Opinion, with some modifications. These measures are designed to minimize effects from crop idling water transfers. As part of the approval process, Reclamation will have access to the land to verify how the water transfer is being made available and to verify that the actions to protect the giant garter snake (GGS) are being implemented. Measures include:

  - The block size of idled rice parcels will be limited to 320 acres in size with no more than 20 percent of rice fields idled cumulatively (from all sources of fallowing) in each county. The 320-acre blocks will not be located on opposite sides of a canal or other waterway, and will not be immediately adjacent to another fallowed parcel (a checkerboard pattern is the preferred layout).

  - Reclamation will provide a map(s) to the U.S. Fish and Wildlife Service (USFWS) in June of each year showing the parcels of riceland that are idled for the purpose of transferring water in 2010 and 2011. These maps will be prepared to comport to Reclamation's GIS standards.

  - Parcels participating in cropland idling will not include lands in the Natomas Basin.

  - Sellers will continue to voluntarily perform giant garter snake best management practices (BMP's), including educating all district personnel to recognize and avoid contact with giant garter snakes, clean only one side of a conveyance channel per year, provide rock-basking habitat in the system's water prisms, and raise flail mower blades to at least 6 inches above the canal operation and maintenance road surfaces.

  - The water seller will maintain a depth of at least two feet of water in the major irrigation and drainage canals (but never more than existing conditions) to provide movement corridors.

  - A field proposed for a cropland idling transfer cannot be fallowed more than two consecutive irrigation seasons.

- As part of a Giant Garter Snake Baseline Monitoring and Research Strategy for the development of a GGS Conservation Strategy, Reclamation is part of the team proposing research goals to help quantify and evaluate the response of the GGS to riceland idling. The

focus of the Strategy will be in the Colusa, Butte, Sutter, and Yolo Basins.

- In order to limit reduction in the amount of over-winter forage for migratory birds, including greater sandhill crane, transfers will avoid or minimize actions near known wintering areas in the Butte Sink (from Chico in the north to the Sutter Buttes in the south and from the Sacramento River in the west to Highway 99 in the east) that could adversely affect foraging and roosting habitat.
- As part of the review process for the identification of areas acceptable for cropland idling, Reclamation will review current species distribution/occurrence information from the Natural Diversity Database and other sources (including rookeries, breeding colonies, and concentration areas). Reclamation will then use the information to make decisions that will avoid cropland idling actions that could result in the substantial loss or degradation of suitable habitat in areas that support core populations of evaluated species that are essential to maintaining the viability and distribution of evaluated species, including black tern. Conservation measures proposed for GGS will also benefit the black tern.
- To ensure effects of cropland idling actions on western pond turtle habitat are avoided or minimized, water levels in drainage canals will be maintained to within 6 inches of existing conditions and canals will not be allowed to completely dry out.
- To minimize effects to the kit fox, water transferred will only be used to irrigate lands/crops that were under irrigation over the 3-year period prior to the transfer to ensure it is applied only to currently-cultivated lands.
- To minimize socioeconomic effects on local areas and to minimize effects on special status species, Reclamation will not approve water transfers via cropland idling if more than 20 percent of recent harvested crop acreage in the county for each eligible crop, including rice, would be idled.

A.2 Minimization Measures

Groundwater

The seller will be responsible for assessing and minimizing or avoiding adverse effects resulting from the transfer within the source area of the transfer. Each district will be required to confirm that the proposed groundwater pumping will be compatible with state and local regulations and groundwater management plans. Reclamation will verify that sellers adopt minimization measures to

minimize the potential for adverse effects related to groundwater extraction. Required information is detailed in the Draft Technical Information Papers for Water Transfers in 2010 for groundwater substitution transfers.

Well Review Process Potential sellers will be required to submit well data for Reclamation review as part of the transfer approval process.

Well Locations Reclamation will continue to use the well acceptance criteria in Table 3.2-2 to minimize effects associated with groundwater-surface water interaction.

Monitoring Plan Potential sellers will be required to complete and implement a monitoring plan that must, at a minimum, include the following components:

- *Monitoring Well Network*. The monitoring program will incorporate a sufficient number of monitoring wells to accurately characterize groundwater levels and response in the area before, during, and after transfer pumping takes place.

- *Flow Measurements*. All wells pumping to replace surface water designated for transfer shall be configured with a permanent instantaneous and totalizing flow meter (capable of measuring well discharge rates and volumes). Flow meter readings will be recorded upon initiation of pumping and at designated times, but no less than monthly, during the duration of the transfer.

- *Groundwater Levels*. The selling agency will collect measurements of groundwater levels in both production and monitoring wells. The seller will measure groundwater levels, no less than monthly, before, during and after the transfer. Post-transfer monitoring will continue until groundwater levels recover to pre-pumping levels or groundwater levels recover to seasonal highs in the spring of the year following the transfer, whichever comes earlier. The seller must measure water levels with a tape capable of measuring from a clearly marked reference point to the water surface in the well with a precision of at least plus or minus 0.1 feet.

- *Groundwater Quality*. For municipal sellers, the comprehensive water quality testing requirements of Title 22 should be sufficient for the water transfer monitoring program. Agricultural sellers shall measure specific conductance in samples from each participating production well. Samples shall be collected when the seller first initiates pumping, monthly during the transfer period, and at the termination of transfer pumping. If specific conductance measurements exceed 900 micromhos/cm, additional water quality field testing and laboratory analysis may be required, at the seller's expense.

- *Land Subsidence* The extent of required land subsidence monitoring will depend on the expected susceptibility of the area to land subsidence. Areas with documented land subsidence will require more extensive monitoring than other areas. Reclamation will work with the seller to develop the specifics of a mutually agreed upon subsidence monitoring effort.

- *Coordination of Monitoring*. The monitoring program will include a plan to coordinate the collection and organization of monitoring data, and communication with the well operators and other decision makers.

- *Monitoring Reports.* The proposed monitoring program will describe the method of reporting monitoring data. At a minimum, sellers will provide data summary tables to Reclamation, both during and after program pumping. Post-program reporting will continue until water levels recover to pre-pumping levels or water levels recover to seasonal highs in the spring of the year following the transfer. Sellers will provide a final summary report to Reclamation evaluating the effects of the water transfer by June 1 of the year following the transfer.

Mitigation Plan Potential sellers will also be required to complete and implement a mitigation plan. If the seller's monitoring efforts indicate that the operation of wells for groundwater substitution pumping are causing substantial adverse impacts, the seller will be responsible for mitigating any significant environmental impacts that occur. Mitigation actions could include:

- Curtailment of pumping until natural recharge corrects the issue.

- Lowering of pumping bowls in third party wells affected by transfer pumping.

- Reimbursement for significant increases in pumping costs due to the additional groundwater pumping to support the transfer.

- Other actions as appropriate.

To ensure that mitigation programs will be tailored to local conditions, the mitigation plan must include the following elements:

1. A procedure for the seller to receive reports of purported environmental or third party effects. The seller must meet with the claimant of the impact within 5 business days of the claim and contact Reclamation of the impact within 10 business days of the claim.

2. A procedure for investigating any reported effect. The investigation must include analysis of groundwater elevations, pumping data,

groundwater quality data, and other information relevant to the identified impact.

3. Development of mitigation options, in cooperation with the affected third parties, for legitimate effects. The seller shall strive to develop agreed upon mitigation measures within 20 business days of meeting with the claimant of the impact.

4. Assurances that adequate financial resources are available to cover reasonably anticipated mitigation needs.

5. Commitment to avoid or mitigate such effects during future transfers.

Air Quality

If transfers result NOx emissions exceeding local thresholds, then Reclamation and willing sellers will work together to implement one, or a combination, of the following mitigation measures that is appropriate. The minimization measures will be implemented within the willing seller's air district.

1. Reclamation will require willing sellers to use only electric pumps. For each groundwater pump that is not electric that is used for groundwater substitution for the Proposed Action, the willing seller will retrofit non-program pumps in amounts necessary to offset the maximum increases in project-related air pollutant emissions.

2. Reclamation will require willing sellers to purchase offsets to compensate for producing project-related emissions. Offsets can incorporate a variety of emission reduction options including converting diesel pumps to electric or propane (as stated above), reduced fossil fuel consumption because of cropland idling transfers (approximately 15 percent reduction), an accelerated pump repair schedule (approximately 20 percent reduction), or conversion to solar pumps (complete reduction in emissions). The willing seller can also include additional emission reduction options; however, the willing seller must include quantitative data indicating how those options lower the emissions to acceptable levels.

Appendix B
Special Status Wildlife Species with Potential to Occur

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Common Name *Scientific Name*	Special Status*		Distribution	Habitat Association	Seasonal Occurrence	Potential Impact
	Federal	**State**				
Invertebrates						
California fairy shrimp *Linderiella occidentalis*	**C**	--	Most of the length of California's Central Valley, from the Millville Plains and Stillwater Plains in Shasta County to Pixley in Tulare County with disjunct populations in the Santa Rosa Plateau near Rancho Santa California in Riverside County.	Found in a variety of natural and artificial seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities.	Has been collected from early December to early May.	Suitable habitat may occur within the project area. Low potential for occurrence due to predators (i.e. fish).
Conservancy fairy shrimp *Branchinecta conservation*	**E, X**	--	Northern two-thirds of the Central Valley. It ranges from Vina Plains of Tehama County; Sacramento NWR in Glenn County; Jepson Prairie Preserve and surrounding area east of Travis Air Force Base, Solano County; Mapes Ranch west of Modesto, Stanislaus County.	Inhabits the ephemeral water of swales and vernal pools. It is most commonly found in grass or mud bottomed swales, earth sump, or basalt flow depression pools in unplowed grasslands.	Has been collected from early December to early May.	There is a CNDDB occurrence and suitable habitat may exist in the project area, however this species is not likely to occur on the site due to predators (i.e. fish).
Delta green ground beetle *Elaphrus viridis*	**T, X**	--	Has only been found in the greater Jepson Prairie area of south central Solano County.	Open habitats in a grassland-playa pool matrix. Adults may occur in surrounding grasslands.	February to mid-May.	Not likely to occur in rice fields, no suitable habitat present (i.e. grasslands).
Lange's metalmark butterfly *Apodemia mormo langei*	**E**	--	Restricted to sand dunes along the southern bank of the Sacramento-San Joaquin River, and is currently found only at Antioch Sand Dunes in Contra Costa County.	Found only in the Antioch sand dunes.	Breeding season is August -September, Larvae hatch during rainy months.	There is a CNDDB occurrence in Sacramento County; however, this species is located outside the project area and no suitable habitat is present (i.e. sand dunes).
Longhorn fairy shrimp *Branchinecta longiantenna*	**E, X**	--	Restricted to northern, central, and portions of southern California; populations along the eastern margin of the Central Coast Mountains from Concord, Contra Costa County south to Soda Lake in San Luis Obispo County; the Kellogg Creek watershed; the Altamont Pass area; the western and northern boundaries of Soda Lake on the Carrizo Plain; and Kesterson National Wildlife Refuge in the Central Valley.	Found in ephemeral freshwater habitats, such as vernal pools and swales.	Has been observed from late December until late April	No CNDDB occurrences; not likely to occur due to lack of suitable habitat (i.e. vernal pools).
Mid-valley fairy shrimp *Branchinecta mesovallensis*	**Under review**	--	Counties within the Great Central Valley, including Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa Counties.	Found in vernal pools, seasonal wetlands that fill with water during fall and winter rains	Has been collected from early December to early May.	Suitable habitat may occur within the project area. Low potential for occurrence due to predators (i.e. fish).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	**T, X**	--	Central Valley and surrounding foothills below 3,000 feet elevation.	Dependent on elderberry shrubs (host plant) as a food source. Potential habitat is shrubs with stems 1 inch in diameter within Central Valley.	Year round for host plant and exit holes; March-June for adults	Elderberry shrubs will not be impacted, therefore no impact to beetles will occur.
Vernal pool fairy shrimp *Branchinecta lynchi*	**T, X**	--	Endemic to the Central Valley, Central Coast Mountains, and South Coast Mountains of California. It ranges from the Vina Plains in Tehama County, through the Central Valley, and south along the Central Coast to northern Santa Barbara County.	Inhabits the ephemeral water of swales and vernal pools. It is most commonly found in grassed or mud bottomed swales, earth sump, or basalt flow depression pools in unplowed grasslands.	Has been collected from early December to early May.	Suitable habitat may occur within the project area. Low potential for occurrence due to predators (i.e. fish).

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	Federal	**State**				
Vernal pool tadpole shrimp *Lepidurus packardi*	**E, X**	**--**	Endemic to the northern portion of the Central Valley of California. This species occurs from the Millville Plains and Stillwater Plains in Shasta County south throughout the Central Valley to Merced County.	Found in a variety of natural and artificial seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities.	Has been collected from early December to early May.	Suitable habitat may occur within the project area. Low potential for occurrence due to predators (i.e. fish).
Amphibians						
California red-legged frog *Rana aurora draytonii*	**T, PX**	**SSC**	Northwestern California to northwestern Baja California. May now be extirpated in the southern Sierra Nevada; other Sierra Nevada foothill populations are small and highly localized. Nearly all current Central Valley sites are on the Coast Range slope of	Usually found in or near quiet permanent water of streams, freshwater marshes, or (less often) ponds and other quiet bodies of water; also damp woods and meadows some distance from water. Occurs in sites with dense vegetation (e.g., willows) close to water.	Year round	Suitable habitat is present within the project area. There are 2 CNDDB occurrences in Butte County, both outside of the project area. No impact is likely to occur.
California tiger salamander *Ambystoma californiense*	**T[1], E[2], X**	**CE, SSC**	Found in annual grassland habitat, grassy understories of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. Occurs from near Petaluma, Sonoma Co., east through the Central Valley to Yolo and Sacramento Counties and south to Tulare Co.; and from the vicinity of San Francisco Bay south to Santa Barbara Co.	Lives in vacant or mammal-occupied burrows, occasionally other underground retreats, throughout most of the year, in grassland, savanna, or open woodland habitats. Lays eggs on submerged stems and leaves, usually in shallow ephemeral or semi permanent pools and ponds that fill during heavy winter rains, sometimes in permanent ponds; breeding takes place in fish free pools and ponds.	Migrates up to about 2 km between terrestrial habitat and breeding pond. Migrations may occur from November through April.	There are CNDDB occurrences in Butte, Sacramento, and Sutter counties. Not likely to occur in rice fields, no suitable habitat present due to predatory fish.
Foothill yellow-legged frog *Rana boylii*	**SC**	**SSC**	This species is known from the Pacific drainages from Oregon to the upper San Gabriel River, Los Angeles County, California, including the coast ranges and Sierra Nevada foothills in the United States.	This species inhabits partially shaded, rocky streams at low to moderate elevations, in areas of chaparral, open woodland, and forest.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. rocky streams).
Western spadefoot toad *Spea hammondii*	**--**	**SSC**	This species occurs in the Central Valley and bordering foothills of California and along the Coast Ranges into northwestern Baja California, Mexico.	Lowlands to foothills, grasslands, open chaparral, pine-oak woodlands. Prefers shortgrass plains, sandy or gravelly soil. It is fossorial and breeds in temporary rain pools and slow-moving streams that do not contain bullfrogs, fish, or crayfish.	Year round	Not likely to occur in rice fields, no suitable habitat present due to predatory fish, bullfrogs, etc..
Reptiles						
Giant garter snake *Thamnophis gigas*	**T**	**T**	Sacramento and San Joaquin Valleys from Butte County in the north to Kern County in the south.	Primarily associated with marshes, sloughs, and irrigation ditches. Generally absent in larger rivers.	Year round	Suitable habitat is present within the project area (i.e. rice fields) and a high potential to occur. There is CNDDB occurrences throughout the project area. Conservation strategies are in place for this species.

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	Federal	**State**				
Western pond turtle *Actinemys marmorata*	**Under review**	**SSC**	Ranged from extreme western Washington and British Columbia to northern Baja California, mostly to the west of the Cascade-Sierra crest.	The western pond turtle occupies a wide variety of wetland habitats including rivers and streams (both permanent and intermittent), lakes, ponds, reservoirs, permanent and ephemeral shallow wetlands, abandoned gravel pits, stock ponds, and sewage treatment.	Year round	Suitable habitat occurs within the project area. High potential for occurrence due to ditches, canals, rice fields, etc.
Birds						
Aleutian Canada goose *Branta canadensis leucopareia*	**D**	**--**	Alaska to California	Found grazing in golf courses, agricultural lands, and any open ground adjacent to water. Nests in grasses and marshes.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
American peregrine falcon *Falco peregrinus anatum*	**D, NMBMC**	**E, FP**	Throughout California.	Breeds in woodland, forest and coastal habitats on protected cliffs and ledges. Riparian areas and coastal and inland wetlands are important habitats yearlong especially during the non-breeding season.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. cliff habitats).
Bald eagle *Haliaeetus leucocephalus*	**D**	**E**	Throughout California.	Riparian areas near coasts, rivers, and lakes. Nesting generally occurs in large old-growth trees in areas with little disturbance.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. rivers, lakes).
Bank swallow *Riparia riparia*	**--**	**T, SSC**	A neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. Breeding population in California occurs along banks of the Sacramento and Feather rivers in the northern Central Valley.	Requires vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. Feeds primarily over grassland, shrub land, savannah, and open riparian areas during breeding season and over grassland, brushland, wetlands, and cropland during migration.	March-mid-September	Not likely to occur in rice fields, no suitable habitat present (i.e. cliff habitat)
Black tern *Chlidonias niger*	**--**	**SSC**	Common spring and summer visitor to fresh emergent wetlands of California.	Uses fresh emergent wetlands, lakes, ponds, moist grasslands, and agricultural fields. In migration, some take coastal routes and forage offshore.	April-September	Suitable habitat is present within the project area (i.e. rice fields) and a high potential to occur. Conservation strategies are in place for this species.
Black-crowned night heron *Nycticorax nycticorax*	**SC**	**--**	Resident in lowlands and foothills throughout most of California, including the Salton Sea and Colorado River areas, and very common locally in large nesting colonies.	Feeds along the margins of lacustrine, large riverine, and fresh and saline emergent habitats. Nests and roosts in dense-foliaged trees and dense emergent wetlands.	Year round	Suitable habitat present in project area. Low impact will occur. Can relocate to other habitats within the area.
California black rail *Laterallus jamaicensis coturniculus*	**SC**	**T, FP**	Rare to locally common resident in a few scattered locations throughout California including San Pablo and San Francisco Bays, some breeding in the northern central valley.	Prefers grassy, fresh, and brackish water marshes, also fresh water cattail and bullrush marshes at lower elevations. Nesting in dense vegetation above the water or on the ground.	Year round	There are CNDDB occurrences in Butte and Sacramento counties, but they are located outside of the project area. Not likely to occur in rice fields, no suitable habitat present (i.e. dense vegetation).

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California gull *Larus californicus*	--	**WL**	Throughout California	Along the coast of sandy beaches, mudflats, rocky intertidal, and pelagic areas of marine and estuarine habitats, as well as fresh and saline emergent wetlands. Inland, frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
California yellow warbler *Dendroica petechia brewsteri*	--	**SSC**	Throughout California	Frequents open to medium-density woodlands and forests with a heavy brush understory in breeding season. In migration, found in a variety of sparse to dense woodland and forest habitats.	April-October	Not likely to occur in rice fields, no suitable habitat present (i.e. dense woodland and forest habitats).
Cooper's hawk *Accipiter cooperii*	--	**WL**	Throughout California	Frequents landscapes where wooded areas occur in patches and groves. Often uses patchy woodlands and edges with snags for perching. Dense stands with moderate crown-depths used for nesting.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. dense woodlands).
Double-crested cormorant *Phalacrocorax pelagicus*	--	**WL**	Along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters.	Open water with offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Requires undisturbed nest-sites beside water, on islands or mainland. Uses wide rock ledges on cliffs; rugged slopes; and live or dead trees, especially tall ones.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Golden eagle *Aquila chrysaetos*	**T**	**E**	Throughout California	Riparian areas near coasts, rivers, and lakes. Nesting generally occurs in large old-growth trees in areas with little disturbance.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. rivers, lakes, coastal areas).
Great blue heron *Ardea herodias*	--	--	Throughout California	Found in shallow estuaries, fresh and saline emergent wetlands, along riverine and rocky marine shores, in croplands, pastures, salt ponds, and in mountains above foothills. Nests roosts in large trees.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Great egret *Ardea alba*	--	--	Throughout California	Feeds and rests in fresh, and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. Nests roosts in large trees.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Great grey owl *Strix nebulosa*	--	**E**	A rarely seen resident in the Sierra Nevada from the vicinity of Quincy, Plumas Co. south to the Yosemite region.	Uses trees in dense forest stands for roosting cover. Small trees and snags in, or on edge of, meadows used for hunting perches. Breeds in old-growth red fir, mixed conifer, or lodgepole pine habitats, always in the vicinity of wet meadows.	Year round	There is a CNDDB occurrence in Glenn County; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. dense forest stands).

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	Federal	State				
Greater sandhill crane *Grus canadensis tabida*	--	T, FP	Breeds only in Siskiyou, Modoc and Lassen counties and in Sierra Valley, Plumas and Sierra counties. Winters primarily in the Sacramento and San Joaquin valleys from Tehama south to Kings Counties.	In summer, this race occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. Frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains.	Migration southward is September-October and northward is March-April.	Suitable habitat is present within the project area (i.e. rice fields) and a high potential to occur. There is CNDDB occurrences in Butte and Sutter Counties. Conservation strategies are in place for this species.
Least bell's vireo *Vireo bellii pusillus*	E	E	California to northern Baja.	Inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically associated with willow, cottonwood, baccharis, wild blackberry, or mesquite in desert localities.	March-August	Not likely to occur in rice fields, no suitable habitat present (i.e. dense riparian areas).
Little willow flycatcher *Empidonax traillii brewsteri*	--	E	Migrant at lower elevations, primarily in riparian habitats throughout California	Most numerous where extensive thickets of low, dense willows edge on wet meadows, ponds, or backwaters.	Spring (mid-May to early June) and fall (mid-August to early September)	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. dense willows).
Long-billed curlew *Numenius americanus*	SC	WL	Along the California coast, and in the Central and Imperial valleys.	Upland shortgrass prairies and wet meadows are used for nesting; coastal estuaries, open grasslands, and croplands are used in winter.	Winter migrant from July-April	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Long-eared owl *Asio otus*	--	SSC	Throughout California	Frequents dense, riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats. Also found in dense conifer stands at higher elevations.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. forest and woodland habitats).
Merlin *Falco columbarius*	--	WL	Occurs in most of the western half of California below 3900 ft.	Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats.	Winter migrant from September-May	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Northern harrier *Circus cyaneus*	--	SSC	Throughout lowland California, concentrated in the Central Valley and coastal valleys.	Breeds in annual grasslands and wetlands. Prefers marshes and grasslands for foraging and nesting. Also uses agricultural fields for nesting and foraging, although nests may be destroyed by agricultural activities.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Osprey *Pandion haliaetus*	--	WL	Northern California from Cascade Ranges south to Lake Tahoe, and along the coast south to Marin County.	Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. mixed conifer forest and large fish bearing waters).
Short-eared owl *Asio flammeus*	--	SSC	Endemic to marshes bordering the San Francisco, San Pablo Bays and Suisun Bay .	Open country, including grasslands, wet meadows and cleared forests. Occasionally in estuaries during breeding season.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. meadows and cleared forest).
Snowy egret *Egretta thula*	--	--	Throughout California	Found along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.

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	Federal	State				
Swainson's hawk *Buteo swainsoni*	**SC, MNBMC**	**T**	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley.	Nests in mature trees, including valley oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain and row crop fields.	Spring and Summer; small wintering population in the Delta	There are CNDDB occurrences throughout the project area and suitable habitat is present. Low impact will occur. Can relocate to other habitats within the area.
Tricolored blackbird *Agelaius tricolor*	**--**	**SSC**	A resident in California found throughout the Central Valley and in coastal districts from Sonoma County south.	Breeds near fresh water, preferably in emergent wetlands with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs. Feeds in grassland and cropland habitats.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Western burrowing owl *Athene cunicularia hypugaea*	**--**	**SSC**	Central and southern coastal habitats, Central Valley, Great Basin, and deserts.	Open annual grasslands or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent upon burrowing mammals (especially California ground squirrel) for burrows.	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area. Not likely to occur in rice fields due to lack of burrows.
Western snowy plover *Charadrius alexandrinus*	**T**	**SSC**	Along the west coast states, with inland nesting taking place at the Salton Sea, Mono Lake, and at isolated sites on the shores of alkali lakes in northeastern California, in the Central Valley, and southeastern deserts.	Nests, feeds, and takes cover on sandy or gravelly beaches along the coast, on estuarine salt ponds, alkali lakes, and at the Salton Sea.	Migration is from July March (some year round populations).	There is a CNDDB occurrence in Yolo County; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. gravelly beaches).
Western yellow-billed cuckoo *Coccyzus americanus*	**SC, C**	**E**	Uncommon to rare summer resident in scattered locations throughout California.	Deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of the vegetation. In Sacramento Valley, also utilizes adjacent orchards, especially of walnut. Nests in sites with some willows, dense low-level or understory foliage, high humidity, and wooded foraging spaces.	Summer migration is from June-September.	There are CNDDB occurrences throughout the project area; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. dense riparian thickets).
White-faced ibis *Plegadis chihi*	**--**	**WL**	Uncommon summer resident in sections of southern California, a rare visitor in the Central Valley, and is more widespread in migration.	Feeds in fresh emergent wetlands, shallow lacustrine waters, muddy grounds of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetlands.	Present in California from April-October.	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
White-tailed kite *Elanus leucurus*	**SC, MNBMC**	**FP**	Central Valley, coastal valleys, San Francisco Bay area, and low foothills of Sierra Nevada.	Savanna, open woodlands, marshes, partially cleared lands and cultivated fields, mostly in lowland situations (Tropical to Temperate zones).	Year round	Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.
Yellow-breasted chat *Icteria virens*	**--**	**SSC**	Summer resident and migrant in coastal California and in foothills of the Sierra Nevada.	Frequents dense, brushy thickets and tangles near water, and thick understory in riparian woodland. Nests above ground in dense shrubs along streams or rivers.		Suitable habitat is present in project area. Low impact will occur. Can relocate to other habitats within the area.

Appendix B. Special Status Wildlife Species with Potential to Occur.

Common Name *Scientific Name*	Special Status*		Distribution	Habitat Association	Seasonal Occurrence	Potential Impact
	Federal	**State**				
Mammals						
California wolverine *Gulo gulo*	**SC**	**T, FP**	A scarce resident of North Coast mountains and Sierra Nevada. Sightings range from Del Norte and Trinity cos. east through Siskiyou and Shasta cos., and south through Tulare Co. A few possible sightings occur in the north coastal region as far south as Lake Co. Habitat distribution in California is poorly known for the North Coast and northern Sierra Nevada.	In north coastal areas, has been observed in Douglas-fir and mixed conifer habitats. In the northern Sierra Nevada, have been found in mixed conifer, red fir, and lodgepole habitats, and probably use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. In the southern Sierra Nevada occur in red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren, and probably wet meadows, montane chaparral, and Jeffrey pine.	Year round (largely nocturnal)	Not likely to occur in rice fields, no suitable habitat present (i.e. mixed conifer habitats in the Sierra Nevada).
Greater western mastiff bat *Eumops perotis californicus*	**SC**	**SSC**	Uncommon resident in southeastern San Joaquin Valley and Coastal Ranges from Monterey Co. southward through southern California, from the coast eastward to the Colorado Desert.	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. Crevices in cliff faces, high buildings, trees, and tunnels are required for roosting.	Year round (nocturnal activity)	Suitable habitat present in project area. Low impact will occur. Can relocate to other habitats within the area.
Pacific fisher *Martes pennati (pacifica) DPS*	**C**	**SSC C-T**	Northern California coastal ranges up to Oregon, and the Sierra Nevadas.	Found in mature, dense, coniferous or mixed coniferous hardwood forest with closed canopies.	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. mixed conifer habitats).
Ring-tailed cat *Brassariscus astutus*	**SC**	**FP**	Ringtails are found in a variety of habitats centered around the semi-arid to arid climates of the west and southwest. Little information available on distribution and relative abundance among habitats.	Occurs in various riparian habitats, and in brush stands of most forest and shrub habitats, at low to middle elevations. Uses hollow trees, logs, snags, cavities in talus and other rocky areas, and other recesses are for cover.	Year round (nocturnal)	Not likely to occur in rice fields. Suitable habitat present in project area. Low impact will occur. Can relocate to other habitats within the area.
Riparian brush rabbit *Sylvilagus bachmani riparius*	**E**	**E**	Isolated populations on Caswell Memorial State Park on the Stanislaus River and along an overflow channel of the San Joaquin River.	Riparian thickets	Year round	Not likely to occur in rice fields, no suitable habitat present (i.e. riparian thickets).
Riparian (San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	**E**	**SSC**	Found along the lower portions of the San Joaquin and Stanislaus rivers in the northern San Joaquin Valley. Historical records for the riparian woodrat are distributed along the San Joaquin, Stanislaus, and Tuolumne rivers, and Corral Hollow, in San Joaquin, Stanislaus, and Merced Counties.	Most numerous where shrub cover is dense and least abundant in open areas. Dens are usually built in willow thickets with oak overstory.	Year round (nocturnal activity)	Not likely to occur in rice fields, no suitable habitat present (i.e. dense shrubs)
San Joaquin kit fox *Vulpes macrotis mutica*	**E**	**T**	Found only in the Central Valley area of California. Kit foxes currently inhabit suitable habitat in the San Joaquin valley and in surrounding foothills of the Coast Ranges, Sierra Nevada, and Tehachapi Mountains; from southern Kern County north to Contra Costa, Alameda, and San Joaquin counties on the west; and near La Grange, Stanislaus County on the east.	Found in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. Build dens for cover.	Year round (mostly nocturnal, but often active during daytime in cool weather)	Suitable habitat on present within the project area and a moderate potential to occur in the southern properties of the project area. Conservation strategies are in place for this species.

Appendix B. Special Status Wildlife Species with Potential to Occur.

Common Name *Scientific Name*	Special Status*		Distribution	Habitat Association	Seasonal Occurrence	Potential Impact
	Federal	State				
Sierra Nevada red fox *Vulpes vulpes necator*	--	E	Found only in high elevations throughout the Sierra Nevadas from Tulare County to Sierra County, and the vicinities around Mt. Lassen and Mt. Shasta.	Found in high-elevation conifer (red fir, sub-alpine conifer), mid-elevation conifer (Lodgepole pine, Sierra mixed conifer, and white fir), shrub (montane chaparral), and hardwood-herbaceous (Annual grassland, Aspen, Montane hardwood, montane riparian and wet meadow).	Year round	There are CNDDB occurrences in Butte and Glenn Counties; however, this species is not likely to occur in rice fields due to lack of suitable habitat. Occurs outside of the project area.

[1]Central CA DPS

[2]Santa Barbara and Sonoma Counties

Green Shading: potential to be affected, further evaluated in Section 3.8

*** Status explanations:**

Federal

E = listed as endangered under the federal Endangered Species Act

T = listed as threatened under the federal Endangered Species Act

MNBMC = Fish and Wildlife Service: Migratory Nongame Birds of Management Concern

SC = species of concern; formerly Category 2 candidate for federal listing

C = Candidate for listing as threatened or endangered

-- = no designations

X = critical habitat

PX = potential critical habitat

D = delisted

State

E = listed as endangered under the California Endangered Species Act

T = listed as threatened under the California Endangered Species Act

CE = candidate endangered under the California Endangered Species Act

FP = fully protected under the California Fish and Game Code

SSC = species of special concern

WL = Watch List

-- = no designations

Appendix C
Special Status Plant Species with Potential to Occur

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	-/-/ 1B	Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba Counties.	Valley and foothill grassland (mesic).	March-May	Not likely to occur in rice fields, no suitable habitat present.
Ahart's paronychia *Paronychia ahartii*	-/-/ 1B	Butte, Shasta, and Tehama Counties.	Cismontane woodland, valley and foothill grassland, and vernal pools.	March-June	Not likely to occur in rice fields, no suitable habitat present.
Alkali milk-vetch *Astragalus tener var. tener*	-/-/ 1B	Central western California including Yolo County.	Subalkaline flats and areas around vernal pools.	March-June	Not likely to occur in rice fields, no suitable habitat present (i.e. subalkali flats).
Antioch Dunes evening-primrose *Oenothera deltoides* ssp. *howellii*	E/E/ 1B	Found only in Contra Costa and Sacramento Counties.	Occurs in inland dunes.	March-September	Not likely to occur in rice fields, no suitable habitat present. Located outside of the project area.
Brittlescale *Atriplex depressa*	-/-/1B	Western Central Valley and valleys of adjacent foothills.	Alkali grassland, alkali meadow, alkali scrub, and vernal pools.	April-October	There is a CNDDB occurrence within Glenn, Colusa, and Yolo counties; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. alkali and vernal pools).
Boggs Lake hedge-hyssop *Gratiola hetersepela*	-/-/1B	Dispersed throughout the Sacramento and Central Valley. Also in Oregon.	Marsh's, swamps, and vernal pools (clay).	April-August	There is a CNDDB occurrence within Sacramento County. Suitable habitat is present but has low potential to occur.
Butte County meadowfoam *Limnanthes floccosa* ssp. *californica*	E/E/1B	Only located in Butte County.	Valley and foothill grassland (mesic), and vernal pools.	March-May	Not likely to occur in rice fields, no suitable habitat present.

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Contra Costa goldfields *Lasthenia conjugens*	E/SSC/1B	San Francisco Bay Delta Regions, and scattered coastal areas.	Cismontane woodlands, playas, valley and foothill grasslands, and vernal pools.	March-June	No CNDDB occurrences; not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools, playas).
Colusa grass *Neostapfia colusana*	T/E/1B	Southern Sacramento Valley, and northern San Joaquin Valley.	Vernal pools.	May-July	There is a CNDDB occurrence within Glenn and Colusa counties, however this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
Crampton's tuctoria (Solano grass) *Tuctoria mucronata*	E/E/1B	Located only in Yolo and Solano Counties.	Valley and foothill grassland (mesic), and vernal pools.	April-August	Not likely to occur in rice fields, no suitable habitat present.
Delta coyote-thistle (button celery) *Eryngium racemosum*	-/E/1B	Calaveras, Contra Costa, Merced, San Joaquin, and Stanislaus Counties.	Riparian scrub and vernally mesic clay depressions.	June-October	Not likely to occur in rice fields, no suitable habitat present. Is not located in areas to be fallowed.
Ferris' milk-vetch *Astragalus tener* var. *ferrisae*	-/-/1B	Sacramento Valley.	Subalkaline flats and areas around vernal pools.	March-June	Not likely to occur in rice fields, no suitable habitat present.
Fox sedge *Carex vulpinoidea*	-/-/2	Northern Sacramento Valley, including Butte County, isolated populations in San Joaquin County.	Riparian woodland, marshes and swamps.	May-June	Suitable habitat present in project area. Low potential to occur. Not likely to establish in rice fields.
Greene's tuctoria *Tuctoria greeni*	E/SSC/1B	Butte, Colusa, Fresno, Glenn, Madera, Merced, Modoc, Shasta, San Joaquin, Stanislaus, Tehama, and Tulare Counties.	Vernal pools.	May-July	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Hairy Orcutt grass *Orcuttia pilosa*	E/E/1B	Northern Sacramento Valley, Pit River Valley; isolated populations in Lake and Sacramento counties.	Vernal pools.	May-September	There is a CNDDB occurrence within Butte and Glenn counties; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
Hartweg's golden sunburst *Pseudobahia bahiifolia*	E/E/1B	Found in El Dorado, Fresno, Madera, Merced, Stanislaus, Tuolumne, and Yuba Counties.	Cismontane woodland, valley and foothill grassland, often acidic.	April-May	There is a CNDDB occurrence within Yolo County; however, this species is not likely to occur in rice fields due to lack of suitable habitat
Heartscale *Atriplex cordulata*	-/-/1B	Western Central Valley and valleys of adjacent foothills.	Alkali grasslands, alkali meadows, and alkali scrub.	May-October	There is a CNDDB occurrence within Butte, Colusa, Yolo, and Glenn counties; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. alkali areas).
Heckard's pepper-grass *Lepidium latipes* var**.** *heckardii*	-/-/1B	Glenn, Solano, and Yolo Counties.	Valley and foothill grassland alkaline flats.	March-May	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. alkali flats).
Henderson's bent grass *Agrostis hendersonii*	- /-/ 3	Found in Butte, Calaveras, Merced, Placer, Shasta, and Tehama counties. Also found in Oregon.	Vernal pools.	March- June	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
Hispid bird's beak *Cordylanthus mollis* ssp. *hispidus*	-/-/1B	Alameda, Kern, Fresno, Merced, Placer, and Solano Counties.	Meadows and seeps, playas, valley and foothill grasslands (alkali).	June-September	Not likely to occur in rice fields, no suitable habitat present.

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Hoover's spurge *Chamaesyce hooveri*	T/-/ 1B	Scattered in Glenn, Butte, Colusa, Merced, Stanislaus, Tehama, and Tulare Counties.	Vernal pools.	July-September	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
Indian valley brodiaea *Broiaea coronaria* ssp. *rosea*	-/E/1B	Scattered in Glenn, Lake, Colusa, and Tehama Counties.	Closed cone coniferous forest, chaparral, valley and foothill grasslands (serpentinite).	May-June	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat.
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	-/-/1B	Colusa, Glenn, Lake, Napa, Tehama, and Yolo counties.	Chaparral, cismontane woodland, valley and foothill grassland, often serpentinite.	April-June	There is a CNDDB occurrence; however, this species is not likely to occur on the site due to lack of suitable habitat.
Keck's checkerbloom *Sidalcea keckii*	E/-/1B	Colusa, Fresno, Merced, Napa, Solano, Tulare, and Yolo counties.	Cismontane woodlands, foothill and valley grasslands (serpentinite).	April-May	There is a CNDDB occurrence; however, this species is not likely to occur on the site due to lack of suitable habitat.
Layne's ragwort *Packera layneae*	T/-/1B	Butte, El Dorado, Tuolumne, and Yuba Counties.	Chaparral and cismontane woodland, rocky and often serpentinite.	April-August	There is a CNDDB occurrence, however this species is not likely to occur on the site due to lack of suitable habitat.
Legenere *Legenere limosa*	SC/-/1B	Sacramento Valley and south of the North Coast Ranges.	Vernal pools.	May-June	Not likely to occur in rice fields, no suitable habitat present (i.e. vernal pools)
Lesser saltscale *Atriplex minuscula*	-/-/1B	Found in Butte, Fresno, Kern, Madera, Merced, Stanislaus, and Tulare Counties.	Chenopod scrub, playas, valley and foothill grasslands (alkali and sandy).	May-October	Not likely to occur in rice fields, no suitable habitat present (i.e. alkali, sandy)

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Lone buckwheat *Eriogonum apricum* var. *apricum*	E/E/1B	Found in Amador and Sacramento Counties.	Chaparral.	July-October	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (chaparral).
Marsh checkerbloom *Sidalcea oregana* ssp. *hydrophila*	-/-/1B	Glenn, Lake, Mendocino, and Napa Counties.	Meadows and seeps, and riparian forest.	June-August	Suitable habitat present in project area. Low potential to occur. Not likely to establish in rice fields.
Milo Baker's lupine *Lupinus milo-bakeri*	-/T/1B	Glenn and Mendocino Counties.	Cismontane woodlands, foothill and valley grasslands.	June-September	There is a CNDDB occurrence, however this species is not likely to occur in rice fields due to lack of suitable habitat.
Northern California black walnut *Juglans hindsii*	-/-/1B	Native stands reported in Napa and Contra Costa Counties.	Riparian woodland.	April-May	Not likely to occur in rice fields, no suitable habitat present.
Palmate-bracted bird's-beak *Cordylanthus palmatus*	E/E/1B	Found in Glenn and Colusa Counties and within the Central Valley.	Alkali meadow, alkali scrub, valley and grasslands.	May-October	Not likely to occur in rice fields, no suitable habitat present (i.e. alkali).
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	-/-/1B	Alamdor, Calaveras, Merced, Placer, and Sacramento Counties.	Vernal pools (often acidic).	May	No CNDDB occurrences; not likely to occur due to lack of suitable habitat (i.e. vernal pools).
Recurved larkspur *Delphinium recurvatum*	-/-/1B	Disbursed throughout the Sacramento and Central Valley.	Chenopod scrub, cismontane, valley and foothill grasslands (alkali).	March-June	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. alkali).

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Red mountain catchfly *Silene campanulata* ssp. *campanulata*	-/E/1B	Found in Colusa, Glenn, Mendocino, Shasta, Tehama, and Trinity Counties.	Chaparral and lower montane coniferous forest, usually sepentinite and rocky.	April-July	There is a CNDDB occurrence in Colusa County; however, this species is not likely to occur in rice fields due to lack of suitable habitat.
Rose-mallow *Hibiscus laiocarpos*	-/-/2	Northern Sacramento County.	Marshes and swamps.	June-September	Suitable habitat present in project area. Low potential to occur. Not likely to establish in rice fields.
Sacramento orcutt grass *Orcuttia viscida*	E/E/1B	Valley grasslands and freshwater wetlands.	Vernal pools.	May-June	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
San Joaquin orcutt grass *Orcuttia inaequalis*	T/E/1B	Fresno, Madera, Merced, Solano, Stanislaus, and Tulare Counties.	Vernal pools.	April-September	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
San Joaquin spearscale *Atriplex joaquiniana*	-/-/1B	Western Central Valley and valleys of adjacent foothills.	Alkali grasslands, and alkali scrub.	April-September	Not likely to occur in rice fields, no suitable habitat present (i.e. alkali).
Sanford's arrowhead *Sagittaria sanfordii*	-/-/1B	Central Valley.	Freshwater marshes, shallow streams, and ditches.	May-August	Suitable habitat on present in ditches; not yet detected. Not likely to establish in rice fields.
Saw-toothed lewisia *Lewisia serrata*	-/-/1B	Eldorado and Placer Counties.	Riparian forest.	May-June	Not likely to occur in rice fields, no suitable habitat present.

APPENDIX C - Special-Status Plants Species with Potential to Occur.

Common Name *Scientific name*	**Special Status* (F/S/CNPS)**	**Distribution**	**Habitat Association**	**Blooming Period**	**Potential Impact**
Silky cryptantha *Cryptantha crinita*	-/-/1B	Shasta and Tehama Counties.	Cismontane woodland, lower montane coniferous forest, riparian forest and woodland, valley foothill and grasslands.	April-May	Not likely to occur in rice fields, no suitable habitat present. Located outside of the project area.
Slender Orcutt grass *Orcuttia tenuis*	T/E/1B	Northern Sacramento Valley, Pit River Valley; isolated populations in Lake and Sacramento Counties	Vernal pools.	May-July	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).
Soft bird's beak *Cordylanthus mollis* ssp. *mollis*	E/SSC/1B	Located in Contra Costa, Marin, Napa, Sacramento, Solano, and Sonoma Counties.	Coastal salt marshes and swamps.	July-November	There is a CNDDB occurrence in Sacramento County; however, this species is not likely to occur in rice fields due to lack of suitable habitat.
Succulent owl's clover *Castilleja campestris* ssp. *succulenta*	T/E/1B	Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus Counties.	Vernal pools.	April-May	There is a CNDDB occurrence; however, this species is not likely to occur in rice fields due to lack of suitable habitat (i.e. vernal pools).

***Status explanations:**

F=Federal
E=Endangered
T=Threatened
SC= Special Concern

S=State
E=Endangered
T=Threatened
SSC=Species of Special Concern

CNPS=California Native Plant Society
1B=Rare, threatened, or endangered in California and elsewhere
2=Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3=Plants about which we need more information - A review list

Appendix D
Commentors, Comments, and Responses

Appendix D
Commentors, Comments, and Responses

D.1 Introduction

This appendix contains responses to comments received on the Draft EA. Each commentor, their associated agency/group, and assigned number identification is listed in Section D.2. The comments included in Section D.3 are excerpted verbatim from the comment letters. Text included in the public comment letters that was not a direct comment on the Draft EA, including introductory material and supplemental information, is not included in Section D.3. A compilation of all comment letters in their entirety is included as Appendix E.

D.2 List of Commentors

Table D-1 presents commentors and associated agencies or groups that submitted comments on the 2010-2011 Water Transfer Program Draft EA.

Table D-1. List of Commentors

Commentor	Agency/Group	Letter ID	Page Number
Erick Johnson	Not Available	1	D-2
Barbara Vlamis, Bill Jennings, and Carolee Krieger	California Water Impact Network, California Sportfishing Protection Alliance, Center for Biological Diversity, and AquAlliance (Coalition)	2	D-2
Carol Perkins	Butte Environmental Council	3	D-66
Darren Cordova	MBK Engineers	4	D-73
Theodore A. Chester	Smiland & Chester	5	D-75
Oral Comments	Not Available	6	D-82

D.3 Comments and Responses

1 – Erick Johnson

1-1

Comment*:*
Transfer water will be conveyed during July through September only. Am I missing something in other parts of the document or is that a limitation?

Response:
As discussed in Section 2.2, the EA analyzes transfers that are included in the proposed action of the Biological Opinions on the Continued Long-term Operations of the CVP/SWP (Opinions) (National Marine Fisheries Service 2009; U.S. Fish and Wildlife Service 2008). The Opinions include the following text:

> *"Although transfers may occur at any time of year, proposed exports for transfers apply only to the months July through September. For transfers outside those months, or in excess of the proposed amounts, Reclamation and DWR would request separate consultation."*

The Opinions do not prevent export of transfers during months other than July through September, but exports during other times of year are not included in the Opinions. This EA only analyzes transfers that are included within the Opinions; therefore, all transfer water that requires use of Jones or Banks PP must be exported from the Delta during July through September.

2 –California Water Impact Network, California Sportfishing Protection Alliance, AquAlliance (Coalition)

2-1

Comment:
The Bureau of Reclamation's draft environmental review of the Project does not comply with the requirements of National Environmental Policy Act (NEPA), 42 U.S.C. §4321 et seq. First, we believe that the Bureau needs to prepare an environmental impact statement (EIS) on this proposal, as we believed for the 2009 Drought Water Bank (DWB) that allowed up to 600,000 acre-feet (AF) of surface water transfers, up to 340,000 AF of groundwater substitution, and significant crop idling.

Response:
The Draft EA satisfies NEPA requirements. NEPA requires federal agencies to prepare a detailed environmental impact statement on all major Federal actions significantly affecting the quality of the human environment. The Proposed

Action represents annual or two-year water transfers in 2010 and 2011 between willing buyers and willing sellers, with the potential to transfer a maximum of about 219,878 acre-feet of water. Under the Proposed Action, maximum groundwater substitution transfers would yield about 110,409 acre-feet and maximum crop idling transfers would yield about 109,469 acre-feet. These maximum amounts are less than indicated in the comment, and it is unlikely that the maximum amount would be transferred in a single year. The EA provides a thorough and systematic evaluation of a broad range of environmental issues and concludes that no potentially significant impacts would occur over the transfer period as a result of the Proposed Action. Because the Proposed Action does not constitute a major Federal Action that would result in significant impacts, an EIS is not required. In addition, the Proposed Action is not seen as a precedent setting action continuing on into the future, but rather provides for only temporary transfers over a two-year period to meet the short-term needs of water suppliers that are facing water shortages.

2-2

Comment:

The *2010-2011 Water Transfer Program* seeks approval for 200,000 AF of CVP related water and suggests that the EA covers non-CVP transfer water. Unfortunately, the non-CVP water appears late in the EA (section 3.18 Cumulative impacts), where the table identifies the non-CVP water (p. 3-107), but does not supply a sub-total. When added, non-CVP water equals 195,910 AF of additional water for transfers. The EA reveals that the cumulative total amount potentially transferred from all sources would be up to 392,000 acre feet, (p. 3-Brad Hubbard, US Bureau of Reclamation Dean Messer, California Department of Water Resources Comments on 2010-2011 Water Transfer Program Environmental Review January 19, 2010 Page 2 of 48 2 108) but the actual cumulative number is 395,910 AF of CVP and non-CVP water**.**

Response:

The EA analyzes the Proposed Action, which includes water transfers from CVP contractors to buyers in the CVP or SWP service areas. This document only provides analysis of CVP-related transfers that would require Reclamation approval. Additional transfers are analyzed under cumulative effects (Section 3.18). The subtotal has been added to the table and the cumulative total value has been corrected. The corrected cumulative total does not have a material effect on the analyses and conclusions presented in the Draft EA.

2-3

Comment:

Bureau reliance on the EA itself violates NEPA requirements because, among other things, the EA fails to provide a reasoned analysis and explanation to support the Bureau‘s proposed finding of no significant impact. The EA contains a fundamentally flawed alternatives analysis, and treatment of the

chain of cause and effect extending from project implementation leading to inadequate analyses of nearly every resource, growth inducing impacts, and cumulative impacts.

Response:
As described above in response to comment 2-1, an EA is an appropriate level of analysis for the 2010-2011 Water Transfer Program. According to the DOI NEPA Regulations (Section 46.310), when the Responsible Official determines that there are no unresolved conflicts about the Proposed Action with respect to alternative uses of available resources, the EA need only consider the Proposed Action and proceed without consideration of additional alternatives, including the No Action Alternative. Responses to individual comments pertaining to alternatives and impacts are provided where appropriate below.

2-4

Comment:
An EIS would afford the Bureau, DWR, the State Water Resources Control Board, and the California public far clearer insight into how, where, and why the 2010-2011 Water Transfer Program might or might not be needed. The Draft EA/FONSI as released this month fails to provide adequate disclosure of these impacts.

Response:
The purpose and need discussion in Chapter 1 of the EA describe why the Proposed Action is needed. Chapter 2, Alternatives, includes information on where and how the transfers would occur. Text in Chapter 2, Section 2.2.3.1 of the Final EA has been clarified regarding how the transfers would move through the Delta. The information provided in Chapter 2 allows for analysis of impacts, as disclosed in Chapter 3.

2-5

Comment:
Second, California Environmental Quality Act (CEQA) analysis of the 2010-2011 Water Transfer Program is completely absent at the programmatic level. Is the negligence in this regard due to the present litigation that challenges the 2009 Drought Water Bank exemption? The Project‘s actual environmental effects, which are similar to the 2009 Drought Water Bank, the Sacramento Valley Water Management Agreement, and the proposed 1994 Drought Water Bank (for which a final Program Environmental Impact Report was completed in November 1993) are not presented in the EA, FONSI, or in any CEQA document. The Sacramento Valley Water Management Agreement was signed in 2002 and the need for a programmatic EIS/EIR was clear and initiated, but never completed. In 2000, the Governor‘s Advisory Drought Planning Panel report, Critical Water Shortage Contingency Plan promised a program EIR on a drought-response water transfer program, but was never undertaken. Twice in

recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate. So, the Bureau‘s failure to conduct scientifically supported environmental review in an EIS and DWR‘s negligence to provide CEQA review reflects an end-run around established law through the use of water transfers, and is therefore vulnerable to legal challenge under the National Environmental Protection Act (NEPA) and CEQA.

Response:
The document at hand is a Federal EA prepared in accordance with the requirements of the NEPA for a Proposed Action by Reclamation. See response to comment 2-1 regarding the reasons why preparation of an EIS is not warranted for the Proposed Action. As a Federal agency, Reclamation does not complete CEQA compliance; however, Reclamation will verify that sellers have complied with CEQA in accordance with CVPIA requirements. DWR is not a lead agency in this action and the document does not address the transfer of any SWP water. Sellers will complete CEQA documentation or go through the SWRCB process.

2-6
Comment:
Finally, we also question the merits of and need for the Project itself. The existence of drought conditions at this point in time is highly questionable and reflects the state's abandonment of a sensible water policy framework. Our organizations believe the Bureau's EA/FONSI and the absence of DWR's programmatic review go too far to help a few junior water right holders at the expense of agriculture, communities, and the environment north of the Delta. The 2010-2011 Water Transfer Program will directly benefit the areas of California whose water supplies are the least reliable by operation of state water law. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency.

Response:
The commentor's opinion regarding the merits of the Proposed Action is so noted. Reclamation has been directed by the Secretary of the Interior and law, specifically, the Central Valley Project Improvement Act, to facilitate the transfer of water between willing buyers and willing sellers. Many water users are still experiencing reduced allocations and potential water shortages. The Proposed Action represents a short-term opportunity for water users to increase supplies to meet existing water demands. All water transfers would occur between willing sellers and buyers and water rights would not be affected.

2-7

Comment:

The proposed Project will have significant effects on the environment both standing alone and when reviewed in conjunction with the multitude of other plans and programs (including the non-CVP water that is mentioned in the EA cumulative impacts section) that incorporate and are dependent on Sacramento Valley water. Ironically, the Bureau appears to recognize in its cumulative impacts discussion that there is potential for significant adverse impacts associated with the Project, but instead of conducting an EIS as required, attempts to assure the public that the 2010-2011 Water Transfer Program will be deferred to the willing sellers through individual monitoring and mitigation programs as well as through constraining actions taken by both DWR and Bureau professional staff whose criteria ought instead be incorporated into the Proposed Action Alternative (EA at p. 2-1, FONSI at p. 1-9).

Response:

The Draft EA determines that the Proposed Action would not contribute significantly to cumulative impacts; and the Environmental Commitments and minimization measures will reduce potential cumulative effects of the Proposed Action. As stated in the document, Reclamation will not approve water transfers without appropriate monitoring and mitigation plans in place. The Draft Technical Information for Water Transfers in 2010 provides transfer proponents with the information to meet this requirement. Reclamation staff will ensure the measures stated in the monitoring and mitigation plans are being implemented through review of monthly reports, field visits, and necessary coordination with transfer participants. The requirement of the monitoring and mitigation will be included in the transfer approval.

2-8

Comment:

It is impossible to evaluate whether or not the mitigation and monitoring plans will be adequate to relieve the Bureau and DWR of responsibility for impacts from the Project (including the non-CVP water transfers). The language used in the EA (p.3-25) and the Draft Technical Information for Water Transfers in 2010 (November 2009) (p. 26-31) fail to pass the blush test (details below).Of course, this is not a permissible approach under NEPA; significant adverse impacts should be mitigated or avoided altogether as CEQA normally requires. Moreover, in light of the wholly inadequate monitoring and mitigation planned for the 2010-2011 Water Transfer Program‘s extensive water transfer program, the suggestion that the public should be required to depend on the insufficient monitoring to provide the necessary advance notice of significant adverse impacts is an unacceptable position.

Response:
The Environmental Commitments and minimization measures reduce or avoid potential impacts and are an acceptable approach under NEPA. Implementation of these measures is required by Reclamation for approval of the transfer. Reclamation staff will ensure that measures are being implemented through review of monthly reports, field visits, and necessary coordination with transfer participants. The requirement of the monitoring and mitigation will be included in the transfer approval.

2-9

Comment:
We incorporate by reference the following documents:

- Butte Environmental Council‘s comments on the Supplemental Environmental Water Account EIR/EIR, 2006.
- Butte Environmental Council‘s letter to DWR regarding the Drought Water Bank Addendum from Lippe Gaffney Wagner LLP, 2009.
- Butte Environmental Council‘s letter to DWR regarding the Drought Water Bank Addendum.
- Multi-Signatories letter regarding the Drought Water Bank, 2008.
- Professor Kyran Mish‘s White Paper, 2008.
- Professor Karin Hoover‘s Declaration, 2008.

Response:
Comment noted. Documents incorporated by reference will be available at Reclamation’s Mid-Pacific Region main office.

2-10

Comment:
Perhaps even more telling, the Bureau actually began its own Programmatic EIS to facilitate water transfers from the Sacramento Valley and the interconnected actions that are integrally related to it, but never completed that EIS and now has impermissibly broken out this current segment of the overall Program for piecemeal review in the present Draft EA. See 68 Federal Register 46218 (Aug 5, 2003) (promising a Programmatic EIS on these related activities, include[ing] groundwater substitution in lieu of surface water supplies, conjunctive use of groundwater and surface water, refurbish existing groundwater extraction wells, install groundwater monitoring stations, install new groundwater extraction wells… *Id.* At 46219. See also http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=788 (current

Bureau website on Short-term Sacramento Valley Water Management Program EIS/EIR).

Response:
Both of these citations refer to the Sacramento Valley Water Management Program (SVWMP) program, which is not related to implementation of water transfers under the 2010-2011 Water Transfer Program. Implementation of the SVWMP, if approved, would not occur until sometime after the 2010-2011 Water Transfer Program ends.

2-11

Comment:
We strongly urge the Bureau to withdraw this inadequate environmental document and instead prepare a joint EIS/R on the 2010-2011 Water Transfer Program, before approval by the State Water Resources Control Board (SWRCB), in order to comply with both NEPA and CEQA requirements for full disclosure of human and natural environmental effects.

NEPA requires federal agencies to prepare a detailed environmental impact statement on all major Federal actions significantly affecting the quality of the human environment . . . . 42 U.S.C. §4332(2)(C). This requirement is to ensure that detailed information concerning potential environmental impacts is made available to agency decision makers and the public before the agency makes a decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). CEQA has similar requirements and criteria.

Response:
Refer to response to comment 2-1.

2-12

Comment:
The Bureau has not provided a convincing statement of reasons explaining why the DWB's impacts are not significant. So long as there are "substantial questions whether a project *may* have a significant effect on the environment," an EIS must be prepared. *Id.* (emphasis added and internal quotation marks omitted). Thus, "the threshold for requiring an EIS is quite low." *NRDC v. Duvall*, 777 F. Supp. 1533, 1538 (E.D. Cal. 1991). Put another way, as will be shown through our comments, the bar for sustaining an EA/FONSI under NEPA procedures is set quite high, and the Bureau fails to surmount it on the 2010-2011 Water Transfer Program.

Response:
The Final EA provides a thorough analysis of Proposed Action's effects on environmental resources, addressing a broad range of environmental topics and impact categories presented in Chapter 3 and concluded that no significant

impacts would occur. The 2010-2011 Water Transfer Program does not represent a major Federal Action that would have significant impacts; therefore, an EIS is not required.

2-13

Comment:

NEPA regulations promulgated by the Council on Environmental Quality identify factors that the Bureau must consider in assessing whether a project may have significant environmental effects, including:

> (1) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. 40 C.F.R. §1508.27(b)(5).
>
> (2) The degree to which the effects on the quality of the human environment are likely to be highly controversial. *Id.* §1508.27(b)(4).
>
> (3) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate on a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. *Id.* §1508.27(b)(7).
>
> (4) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. *Id.* §1508.27(b)(6).
>
> (5) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. *Id.* §1508.27(b)(9).
>
> Here, the Bureau has failed to take a hard look at the environmental impacts of the Project. As detailed below, there are substantial questions about whether the 2010-2011 Water Transfer Program‘s proposed water transfers will have significant effects on the region‘s environmental and hydrological conditions especially groundwater, the interactions between groundwater and surface streams of interest in the Sacramento Valley region, and the species dependent on aquatic and terrestrial habitat. There are also substantial questions about whether the 2010-2011 Water Transfer Program will have significant adverse environmental impacts when considered in conjunction with the other related water projects that have occurred in the last decade and that are underway and proposed in the region. The Bureau simply cannot rely on the EA/FONSI for the foreseeable environmental impacts of the proposed 2010-2011 Water Transfer Program and still comply with NEPA‘s requirements.

Response:
The Draft EA analyses and resultant conclusions take into account all the factors listed in the comment and finds that no significant impacts would occur. Water transfers under the Proposed Action would not have uncertain risks to the human environment. The Proposed Action also does not set precedent. Water transfers have occurred in previous years and effects have been analyzed in past environmental documents. There has been no injury reported from transfers in 2009. The Proposed Action includes Environmental Commitments and minimization measures to reduce or avoid potential impacts. Section 3.18 analyzes cumulative effects of the Proposed Action and other water transfers.

2-14

Comment:
The Proposed Action Alternative is poorly specified and needs additional clarity before decision makers and the public can understand the human and environmental consequences of the 2010-2011 Water Transfer Program. The EA describes the Proposed Action Alternative as one reflecting the Bureau‘s intention to approve transfers of Central Valley Project water from willing sellers who contract with the Bureau ordinarily to use surface water on their croplands. Up to 200,000 AF of CVP water are offered from these sellers, according to Table 2-1 of the EA. In contrast to the EA/FONSI for the 2009 Drought Water Bank, the EA contains no priority criteria to determine water deliveries and simply acknowledges that water will be transferred to agricultural and urban interests (p. 3-88). The EA fails to indicate how much water has been requested by the buyers of CVP or non-CVP water, which is also in contrast to the EA/FONSI and DWR‘s addendum for the 2009 Drought Water Bank. This denial of information further obfuscates the need for the Project.

Response:
The administrative procedures for the 2010-2011 Water Transfer Program are different than those utilized by the 2009 Drought Water Bank. For the Drought Water Bank, DWR solicited participants and helped connect sellers and buyers. Water transfers in 2010 and 2011 would not have a similar intermediary. DWR is not initiating actions, and there is no central party soliciting sellers and buyers. The EA refers to water transfers in 2010 and 2011 as part of a “Water Transfer Program,” but that is only for ease of reference in the document. The transfers are not part of a larger program, but rather a series of independent transfers arranged between individual sellers and buyers on the open market. A clarification of these differences has been added to Chapter 1 of the EA.

The Proposed Action does not include priority criteria to determine water deliveries because Reclamation would not be managing a “program” or bank under the Proposed Action. Reclamation would only facilitate and approve transfers, but would not determine or prioritize who receives water.

Because the negotiation process between willing sellers and potential buyers is ongoing, final amounts that would be transferred are not yet available. The Final EA has been revised to disclose the most current estimates that Reclamation has received regarding potential maximum amounts potential willing sellers could make available for water transfers in 2010 and 2011. The amount CVP contractors could make available would be approximately 219,878 acre feet.

2-15

Comment:

The EA/FONSI's statement of purpose and need (p. 1-1) states specifically that, To help facilitate the transfer of water throughout the State, Reclamation and the Department of Water Resources (DWR) are considering whether they should approve and facilitate water transfers between willing sellers and buyers. This paragraph omits coherent discussion of need. Merely stating that, the transfer water would be conveyed, using CVP or SWP facilities, to water users that are at risk of experiencing water shortages in 2010 and 2011 due to drought conditions and that require supplemental water supplies to meet anticipated demands, lacks specificity and rigor. The purpose and need should also state that this transfer program would be subject to specific criteria for prioritizing transfers.

Response:

Many contractors are still experiencing reduced allocations and face potential water shortages. Contractors are looking for and are willing to purchase additional water supplies, which represents a need for the Proposed Action. All water transfers would occur between willing sellers and buyers. Buyers are not expected to purchase water if it is not needed. Reclamation is facilitating transfers to help meet their contractor's needs and meet their mission. Although criteria are not listed, all transfers will be implemented within the framework of beneficial uses of water. Text has been added to the Background and Alternatives sections (Chapters 1 and 2 of the Final EA).

2-16

Comment:

The EA's description of the proposed action alternative needs to make clear what would occur if sale criteria are in fact applied and if exceptions will be allowed, and if so, by what criteria would exceptions be made.. Do both Project agencies lack criteria to prioritize water transfers? What is the legal or policy basis to act without providing priority criteria? Without foundational criteria, the public is not provided with even a basic understanding of the need for the Project.

Response:

As discussed in the response to comment 2-14, water transfers in 2010 and 2011 would not be part of a bank and would not be subject to prioritization criteria to

determine who receives the water. The purpose and need are included in Section 1.2. Reclamation's decision to be made is whether it should approve and facilitate water transfers from CVP contractors. This decision will be made based on the findings of the Final EA, FONSI, and biological opinion and in accordance with CVPIA.

2-17

Comment:

There is considerable ambiguity over just how many potential sellers there are and how much water they would make available. The EA states that, entities that are not listed in this table [2-1] may decide that they are interested in selling CVP water, but those transfers may require supplemental NEPA analysis to allow Reclamation to complete the evaluation of the transfers, (p. 2-3 and 2-4). Allowing a roving Project location is not permissible and avoids accurate analysis of all impacts including growth inducing and cumulative impacts.

Response:

This EA only analyzes transfers from entities listed in Table 2-1. Transfers proposed by CVP sellers not listed on Table 2-1 will be subject to separate NEPA compliance.

2-18

Comment:

Absent buyers' request numbers and the potential for the participation of unknown additional sellers signals that neither the Bureau nor DWR have a clear idea what the 2010-2011 Water Transfer Program is intended to be. This problem contributes greatly to and helps explain the poorly rendered treatment of causes and effects that permeate the Bureau's EA. The project agencies, decision-makers, and the public all face a moving target with the 2010-2011 Water Transfer Program. Such discrepancies reflect hasty consideration and poor planning by project proponents. Nor can the agencies reasonably attribute their inadequate environmental reviews on lack of warning. The Governor, Senator Dianne Feinstein, and congressional representatives from the San Joaquin Valley have all made fear of drought a centerpiece of their water statements in 2008 and 2009. Yet DWR and the Bureau apparently are not able to present a stable Project with clear needs and criteria.

Response:

As discussed in the response to comment 2-17, the EA analyzes the impacts of sellers listed in Table 2-1 and does not include any unknown additional sellers. Reclamation is not developing or organizing a program, but is only considering whether to approve and facilitate transfers developed by CVP contractors (see response to comment 2-14).

2-19

Comment:

From data available in the EA and the Addendum, it is not possible to determine with confidence just how much water is requested by potential urban and agricultural buyers. There is no attempt to describe how firmly tendered are offers of water to sell or requests to purchase. Guessing at the possible requests based on the 2009 DWB where there were between 400,000 and 500,000 AF of presumably urban buyer requests alone (which had priority over agricultural purchases, according to the 2009 DWB priorities) and a cumulative total of less than 400 TAF from willing sellers, which is also true for the 2010-2011 Water Transfer Program (with just over half of that coming from CVP water), it would appear that many buyers are not likely to have their needs addressed by the 2010-2011 Water Transfer Program. If so, the Bureau and DWR should state the likelihood that many requests will not be fulfilled in order to achieve a full and correct environmental compliance treatment of the proposed action. Such an estimate is necessary for accurate explication of the chains of cause and effect associated with the 2010-2011 Water Transfer Program and which must propagate throughout a NEPA document for it to be adequate as an analysis of potential natural and human environmental effects of the proposed project. We have additional specific questions:

- What are the requests of the San Luis and Delta Mendota Water Authority (SLDMWA)? Is the request for an agricultural use or an urban use of Project water? If it is entirely for agricultural uses, how likely is it to be fulfilled under the non-stated Project priorities for water sales?

- What are the specific urban requests for water made by Avenal State Prison, and the cities of Avenal, Huron, and Coalinga, nested within the SLDMWA request?

- Will sale criteria be premised on full compliance with all applicable environmental and water rights laws? If so, how will cumulative impacts be analyzed under CEQA?

Response:

As discussed in the response to comment 2-14, Reclamation is not developing or organizing a program, but is only considering whether to approve and facilitate transfers developed by CVP contractors. Because there is no central organizing entity, buyers are not submitting their requests but are negotiating directly with potential sellers. Quantitative buyer requests, therefore, are not available. The buyers listed in Table 2-2 have indicated that they may be interested in receiving transfers in 2010 and 2011. The impact analysis in the EA considers transfers from the sellers' areas (defined in Table 2-1) to the buyers' areas (defined in Table 2-2). The overall quantity is limited by the quantities defined in Table 2-1.

As discussed in Section 1.2, Purpose and Need, Reclamation recognizes that water shortages in California have created a need for additional supplies within the export service area. This need may not be fully met by transfers, but Reclamation is considering whether to approve and facilitate transfers to help address this need.

2-20

Comment:

If priority criteria were revealed, how will intervening economic factors beyond the control of the Project be analyzed? Given the added uncertainty, an EIS should be prepared to provide the agencies with advance information and insight into what the sensitivity of the program‘s sellers and buyers are to the influences of prices for water as well as crops such as rice, orchard and vineyard commodities, and other field crops. It is plausible that crop idling will occur more in field crops, while groundwater substitution would be more likely for orchard and vineyard crops. However, high prices for rice the Sacramento Valley‘s largest field crop would undermine this logic, and could lead to substantial groundwater substitution. These potential issues and impacts should be recognized as part of the 2010-2011 Water Transfer Program description and should directly apply to the Agriculture and Land Use, and Socioeconomic sections of the EA, because crop prices are key factors in choices potential water sellers would weigh in deciding whether to idle crops, substitute groundwater, or decline to participate in the DWB altogether. The EA is inadequate because it fails to identify and analyze the market context for crops as well as water that would ultimately influence the size and scope of the 2010-2011 Water Transfer Program.

Rice prices are high because of conditions for the grain in the world market. Drought elsewhere is a factor in reduced yields, but growing populations in south and east Asia demand more rice and the rice industry has struggled to meet that demand.

Response:

Reclamation recognizes that water availability and crop prices affect water available for transfer. Buyers and sellers would negotiate water prices under the transfers. Farmers would be willing participants in the water transfer and would not be expected to participate if it would adversely affect their net revenues.

Districts participating in the transfer indicated the potential maximum amounts of water available for transfer, which are often based on conversations with growers and previous participation levels. These amounts have set the scope for the Proposed Action. If farmers choose not to participate based on economic conditions, impacts would be less than those in identified in the Draft EA.

2-21

Comment:

This is very important. The Bureau tacitly admits that the Bureau and by logical extension, DWR has no idea how many sales of what type (public health, urban, agricultural) can be expected to occur. Put another way, there is a range of potential outcomes for the 2010-2011Water Transfer Program, and yet the Bureau has failed utterly to use the EA to examine a reasonable and representative range of alternatives as it concerns how the priority criteria would be established and affect Project transfers. And DWR has not bothered to conduct an appropriate level of review under CEQA.

Response:

The analysis of the Proposed Action and the No Action Alternative in the EA provides a reasonable range of alternatives for decision-makers and the public. The purpose of the Proposed Action is to help facilitate the transfer of water within the State from CVP willing sellers of water upstream of the Delta to buyers that are at risk of experiencing water shortages in only 2010 and 2011. As stated in response to comment 2-14, Reclamation's role in the Proposed Action is to only facilitate and approve transfers that originate directly between seller and buyer, as may occur on a market-driven basis in 2010 and 2011. In Chapters 2 and 3, the EA includes an appropriate action alternative that contains two reasonable options for water transfers between interested parties in 2010 and 2011, responds to the stated purpose and need, and evaluates potential impacts of such transfers. The EA also addresses impacts associated with the No Action Alternative, as required by NEPA. The EA analysis concludes that no significant impacts would occur from the Proposed Action, providing the basis for a Finding of No Significant Impact (FONSI). The EA/FONSI provides decision-makers and the public with meaningful information regarding a proposed course of action that would respond to the stated purpose and need and would not have a significant impact on the environment.

Response to comment 2-14 also discusses why priority criteria are not identified. The establishment of water transfer priority criteria by Reclamation would not represent a reasonable alternative to include in the EA because it is contrary to basic nature of the anticipated water transfers, being agreements developed directly by and between individual sellers and buyers during the two-year period, and is inconsistent with Reclamation's role in the process.

2-22

Comment:

Nor does the 2010-2011 Water Transfer Program prevent rice growers (or other farmers) from double-dipping. It appears to us they could opt to turn back their surface supplies from the CVP and the State Water Project and substitute groundwater to cultivate their rice crop thereby receiving premiums on both their CVP contract surface water as well as their rice crop this fall when it goes to market.

Response:
Reclamation and DWR have agreed groundwater substitution is a reasonable means of making water available for transfer so long as adequate monitoring and mitigation plans are in place and being implemented.

2-23

Comment:
There appear to be no caps on water sale prices to prevent windfall profits to sellers of Sacramento Valley water in the event that groundwater is substituted in producing crops especially for crops where market prices are high, such as in rice. The DWB in the 1990s capped water prices at $125/acre-foot, much to the disappointment of some water sellers at that time. Why are the state and federal projects encouraging such potential windfall profits at a time when many others suffer through this recession?

Response:
As discussed in the response to comment 2-14, Reclamation is not developing or organizing a program, but is only considering whether to approve and facilitate transfers developed by CVP contractors. Because Reclamation is not organizing the program, it does not have a role in setting prices. Prices will be set on the open market through negotiations between buyers and sellers based on the value of water to both parties.

2-24

Comment:
As stated, neither the Bureau nor DWR state how much of these transfers would go to public health, urban or agricultural buyers. The EA must also (but fails to) address the ability and willingness of potential buyers to pay for Project water given the supplies that may be available. Historically, complaints from agricultural water districts were registered in the comments on the Draft EWA EIS/R and reported in the Final EIS/R in January 2004 indicating that they could not compete on price with urban areas buying water from the EWA. Given the DWB‘s priority criteria, will agricultural water buyers identified in Table 2-2 of the EA be able to buy water when competing with the likes of the Santa Clara Valley Water District and the Metropolitan Water District, representing two of the wealthiest regions of California? As a matter of statewide water, infrastructure, and economic policy, is it wise to foment urban versus agricultural sector competition for water based solely on price? Shouldn‘t other factors be considered in allocating water among our state‘s regions? This fails dramatically to encourage regions to develop their own water supplies more efficiently and cost-effectively without damage to resources of other regions.

Response:
See response to comment 2-14 regarding the fact that the Proposed Action does not include priority criteria to determine water deliveries because Reclamation would not be managing a "program" or bank in that regard. Transfers would be negotiated between willing sellers and buyers. Any agency in the CVP or SWP service areas, including agricultural districts, wanting to purchase transfer water can find a potential seller and negotiate a transfer agreement. Reclamation's 2010-2011 Water Transfer Program covers potential transfers involving water subject to contract with Reclamation and CVP facilities.

2-25
Comment:
Full disclosure of each offer of and each request for 2010-2011 Water Transfer Program water should be provided as part of the EA. This is necessary so the public can understand and have confidence in the efficacy of the Project's purpose and need, benefit from full disclosure of who requests what quantity of water and for what uses, and so that the public may easily verify chains of cause and effect. Urban application of transferred surface water is not examined in the EA/FONSI, as though how urban buyers would use their purchased water had no environmental effects. Since the dry period in California has lasted for over three years, how will purchased water be used and conserved? What growth inducing impacts will transferred water facilitate?

Response:
As discussed in the response to comment 2-14, Reclamation is not developing or organizing a program, but is only considering whether to approve and facilitate transfers developed by CVP contractors. Reclamation does not receive offers or requests for water transfers, but will only receive proposals after they are negotiated between the sellers and buyers. To complete this document, Reclamation asked potential sellers and buyers that had indicated interest in the past that they would like to be included in this document. Tables 2-1 and 2-2 reflect the results of these inquiries.

Additional impact analysis has been added regarding the effects within the buyers' areas in several resource discussions, including surface water, groundwater, and water quality. Section 3.17 analyzes the potential for growth inducement associated with the proposed action, and finds that the short duration of the project would not induce growth.

2-26
Comment:
Nor is a hierarchy of priority uses among urban users for purchasing Project water presented. Could purchased water be used for any kind of landscaping, rather than clearly domestic purposes or strictly for drought-tolerant landscaping? We cannot tell from the EA/FONSI narrative. How can the

citizens of California be assured that water purchased through the 2010-2011 Water Transfer Program will not be used wastefully, in violation of the California Constitution, Article X, Section 2?

Response:
Chapter 2 of the EA indicates in several places that all transfers must meet the transfer provisions of the CVPIA. Reclamation would review each transfer proposal to verify that these provisions are met. The CVPIA includes provisions that would prevent wasteful use of water that violates state law:

"(D) No transfer authorized by this subsection shall be approved unless the transfer is consistent with State law, including but not limited to provisions of the California Environmental Quality Act.

(E) All transfers authorized by this subsection shall be deemed a beneficial use of water by the transferor for the purposes of section 8 of the Act of June 17, 1902, 32 Stat. 390, 43 U.S.C. 372." (Title 34, Public Law 102-575, Section 3405(a)(1))

2-27

Comment:
Will urban users need their Project purchased water only in July through September, or is that the delivery period preferred in the DWB because of ecological and fishery impact constraints on conveyance of purchased water?

Response:
The EA is only analyzing transfers that would move through the Delta export pumps during July through September, based on the contents of the Opinions (see response to comment 1-1).

2-28

Comment:
Should agricultural water users be able to buy any Project water, how will DWR and the Bureau assure that transferred water for irrigation is used efficiently? Many questions are embedded within these concerns that DWR and the Bureau should address, especially when they approach the State Water Resources Control Board to justify consolidating their places of use in their respective water rights permits:

- How much can be expected to be purchased by agricultural water users, given the absence of any criteria, let alone priority criteria, in the 2010-2011 Water Transfer Program?

- How much can be expected to be consumptively used by agricultural water buyers?

- How much can be expected to result in tailwater and ag drainage?

- How much can be expected to add to the already high water table in the western San Joaquin Valley?

- What selenium and boron loads in Mud Slough and other tributaries to the San Joaquin River may be expected from application of this water to WSJ lands?

- What mitigation measures are needed to limit such impacts consistent with the public trust doctrine, Article X, Section 2 of the California Constitution, the Porter-Cologne Water Quality Control Act, and California Fish and Game Code Section 5937?

In other words, the most important chains of cause and effect extending from the potential for groundwater resource impacts in the Sacramento Valley to potential for contaminated drainage water from farm lands in the western San Joaquin Valley where much of the agricultural buyers are located are ignored in the Bureau's EA/FONSI and completely missing due to DWR's failure to comply with CEQA.

Response:
As discussed in response to comment 2-26, CVPIA requirements specify that transfers must comply with state laws. Additional analysis on the potential for water quality impacts associated with agricultural irrigation and drainage has been added to the water quality section (Section 3.3).

2-29

Comment:
Will more of surface water transfers go to urban users than to ag users? The EA's silence on this is disturbing, and highlights the absence of priority criteria. What assurances will the Bureau and DWR provide that criteria exist or will be developed and how will these criteria be presented to the public and closely followed?

- The more that goes to urban water agencies the less environmental impacts there would be on drainage impaired lands of the San Joaquin Valley, a neutral to beneficial impact of the Project's operation on high groundwater and drainage to the SJR.

- However, the more Project water goes to agricultural users than to urban users, the higher would be groundwater levels, and more contaminated the groundwater would be in the western San Joaquin Valley and the more the San Joaquin River would be negatively affected from contaminated seepage and tailwater by operation of the Project.

Response:
As discussed in the response to comment 2-14, Reclamation is not developing or organizing a program, but is only considering whether to approve and facilitate transfers developed by CVP contractors. Both urban and agricultural users could receive transfers. Additional analysis of water quality impacts associated with agricultural irrigation and drainage has been added to the water quality section (Section 3.3) of the EA.

2-30

Comment:
The EA fails to provide a map indicating where the cumulative sources of the Project are located, and where the service areas are to which water would be transferred under the 2010-2011 Water Transfer Program.

Response:
A new map showing cumulative sellers has been added to the cumulative section (Section 3.18).

2-31

Comment:
Two issues concerning water rights are raised by this EA/FONSI:

- **Consolidated Place of Use.** Full disclosure of what the consolidated places of use for DWR and USBR would be, since the permit request to SWRCB will need NEPA coverage. Why is the flexibility claimed for the consolidated place of use necessary to this year's water transfer program? Couldn't the transfers be facilitated through transfer provisions of the Central Valley Project Improvement Act? Will the consolidation be a permanent or temporary request be limited to the duration of the governor's 2009 emergency declaration or of just the 2010-2011 Water Transfer Program? When is the 2010-2011 Water Transfer Program scheduled to sunset? How do the consolidated place of use permit amendments to the SWP and CVP permits relate to their joint point of diversion? Why doesn't simply having the joint point of diversion in place under D-1641 suffice for the purpose of the Project?

Response:
Further information regarding the consolidated place of use has been added to Chapter 2 of the Final EA for clarification. Consolidated place of use would allow CVP contractors to sell water to either CVP or SWP contractors in the export service area, which is why these contractors are listed in Table 2-2. It would also allow transfers from SWP contractors to go to either CVP or SWP contractors in the export service area, but transfers of SWP water are not included in this EA.

Joint point of diversion allows the CVP and SWP to use the other's facilities to divert or convey water, but it does not allow delivery of that water to either Project's service area. Without a consolidated place of use or approval of individual petitions for a change in place of use, CVP water could only be delivered within the CVP service area. The consolidated place of use would be temporary and granted on an annual basis. DWR and Reclamation are currently evaluating the need for a petition to consolidate the place of use of the SWP and CVP. Any such petition would be made in conformance with the requirements in the Water Code and is a separate action not specifically analyzed in this document.

2-32

Comment:

- **Description of the water rights of both sellers and buyers.** This would necessarily show that buyers clearly possess junior water rights as compared with those of willing sellers. Lack of full disclosure of these disparate rights is needed to help explain the actions and motivations of buyers and sellers in the 2010-2011 Water Transfer Program, otherwise the public and decision makers have insufficient information on which to support and make informed choices.

- **Sacramento Valley water rights –** correlative groundwater rights, riparian rights and CVP settlement contract rights

- **San Joaquin Valley water rights –** CVP contract rights only, junior-most contractors within the CVP priority system (especially Westlands Water District).

- **Priority of allocations among water contractors within the CVP and SWP.**

Response:

Section 3.1 of the Draft EA contains information as to potential seller location and source of water. Reclamation's role in the Proposed Action is reviewing and approving, as appropriate, transfer proposals from CVP contractors who are potential sellers. Individual transfer proponents will be responsible for complying with California water rights law.

2-33

Comment:

To establish a proper legal context for these water rights, the Project Action Alternative section of the EA/FONSI should also describe more extensively the applicable California Water Code sections about the treatment of water rights involved in water transfers.

Response:
Reference to compliance with the water code has been added to the Environmental Commitments section of the Project Description in Chapter 2. As noted in the response to comment 2-34 above, the transfer proponents will be required to comply with the applicable water rights provisions.

2-34
Comment:
Thus, there are many avenues by which the 2010-2011 Water Transfer Program is a poorly specified program for NEPA and CEQA purposes, leaving assessment of its environmental effects at best murky, and at worst, risky to all involved, especially users of Sacramento Valley groundwater resources.

Response:
See above responses to comments 2-14 through 2-33 that relate to this summary comment. The Draft EA analyzes potential effects of the Proposed Action in accordance with NEPA requirements.

2-35
Comment:
The Proposed Action Alternative need not have sophisticated forecasts of prices for rice and other commodities. Instead, for an adequate treatment of alternatives, the EA should have examined several reasonable scenarios beyond simply the 2010-2011 Water Transfer Program and a no action alternative. Three reasonable permutations would have considered relative proportions of crop idling versus groundwater substitution (e.g., high/low, low/high, and equal proportions of crop idled water and groundwater substitution).

Response:
The EA analyzes the potential effects of the maximum amount of crop idling and groundwater substitution that could be observed under this two year program. Under this situation, no substantial effects would occur. Other transfer scenarios involving the same maximum quantities of water would not generate substantial effects.

2-36
Comment:
Other reasonable drought response alternatives that can meet operational and physical concerns merit consideration and analysis by the Bureau includes:

- Planned permanent retirement of upslope lands in the western San Joaquin Valley where CVP-delivered irrigation water is applied to lands contaminated with high concentrations of selenium, boron and mercury, and which contribute to high water table and drainage problems for lowland farmers, wetlands and tributaries of the San Joaquin River.

> Retirement of these lands would permanently free up an estimated 3 million acre-feet of state and federal water during non-critical water years. Ending irrigation of these lands would also result in substantial human environmental benefits for the San Joaquin River, the Bay-Delta Estuary, and the Suisun Marsh from removal of selenium, boron, and salt contamination. Having such reasonable and pragmatic practices in place would go a long way to eliminate the need for drought water banks in the foreseeable future.

Response:
As described in Chapter 1 of the EA, relative to purpose and need, the Proposed Action is intended to support a means for addressing an existing need for supplemental water supplies on an immediate and temporary (two year) basis. The Proposed Action contemplates Reclamation providing review and approval of agreements involving water transfers that originate, and are negotiated, directly between willing sellers under contract with Reclamation and buyers. Two options for achieving immediate transfers of water between seller and buyer include groundwater substitution and cropland idling/crop shifting. The nature of the Proposed Action (i.e., approval of a transfer in accordance with CVPIA) supports the analysis of only two alternatives in this EA, including the Proposed Action or the No Action Alternative. According to the DOI NEPA Regulations (Section 46.310), when the Responsible Official determines that there are no unresolved conflicts about the Proposed Action with respect to alternative uses of available resources, the EA need only consider the Proposed Action and proceed without consideration of additional alternatives, including the No Action Alternative.

The basic nature and implementation framework of the measures suggested in the comment are fundamentally different from that of the Proposed Action and do not respond to the purpose and need. The planned permanent retirement of upslope lands in the western San Joaquin Valley would involve a much more complex and comprehensive agreement. This course of action would be inconsistent, if not in direct conflict with, the basic purpose and need to provide immediate sources of supplemental water over 2010 and 2011. Based on the above, it is not considered to represent a reasonable alternative to include for further evaluation in the EA.

Reclamation is working to address drainage-impaired lands under the authority of Public Law 86-488, 74 Statute 156, June 3, 1960, as amended by section 101(e) of the Act of October 18, 1986, Public Law 99-500. Reclamation is proceeding with the implementation of the ROD to provide drainage service under this authority.

2-37

Comment:

- More aggressive investment in agricultural and urban water conservation and demand management among CVP and SWP contractors even on good agricultural lands, including metering of all water supply hook-ups by all municipal contractors, statewide investment in low-flush toilets and other household and other buildings‘ plumbing fixtures, and increased capture and reuse of recycled water. Jobs created from such savings and investments would represent an economic stimulus that would have lasting job and community stability benefits as well as lasting benefits for water supply reliability and environmental stabilization.

Response:

As indicated above, the Proposed Action is intended to support a means for addressing an existing need for supplemental water supplies on an immediate and temporary (two year) basis. The nature of the Proposed Action (i.e., approval of a transfer in accordance with CVPIA) supports the analysis of only two alternatives in this EA, including the Proposed Action or the No Action Alternative. According to the DOI NEPA Regulations (Section 46.310), when the Responsible Official determines that there are no unresolved conflicts about the Proposed Action with respect to alternative uses of available resources, the EA need only consider the Proposed Action and proceed without consideration of additional alternatives, including the No Action Alternative.

Many of the types of measures specified in the comment, such as metering of water supply hook-ups and increased capture and reuse of recycled water, are already being implemented, or are moving towards implementation as part of water agencies’ overall water conservation programs.

Reclamation is not involved in state decisions for investments for conservation; however, Reclamation is currently involved in water conservation efforts within its purview. Reclamation requires all contractors to develop Water Conservation Plans that identify existing conservation measures, conservation targets, and proposed measures to achieve targets. Reclamation has also implemented a Water Conservation Initiative that includes the Water Conservation Challenge Grant Program. The Water Conservation Challenge Grants (previously Water for America Challenge Grants) provide cost share funding for water conservation and efficiency projects. Since 2004, over 150 challenge grant projects have been funded, combining $36 million in Federal funding with local partnerships to construct over $140 million worth of water management improvements in 16 western states. Projects include such activities as converting leaky dirt canals to pipeline, eliminating water losses due to seepage and evaporation to result in substantial water savings; installation of measuring devices, including Supervisory Control and Data Acquisition (SCADA) systems to improve control over water deliveries and to reduce operational spillage; and installation of automation technology to allow more precise, remote control of

water diversions and deliveries. In 2010, Reclamation plans to begin partnering with States, tribes and local entities to develop incentives and best practices in water conservation techniques and water recycling and reuse methodologies.

The ability to effectively quantify, for purposes of a water transfer between seller and buyer, the amount of water savings through such conservation measures is not a well defined process, difficult at best, and can take substantial amounts of time; therefore, the implementation of water conservation measures is not considered to be a reasonable alternative to include for further evaluation in the EA.

2-38

Comment:

C. The 2010-2011 Water Transfer Program EA fails to specify adequate environmental baselines, or existing conditions, against which impacts would be assessed and mitigation measures designed to reduce or avoid impacts.

Response:

The Draft EA describes the pertinent affected environment of the regions that water would be transferred from, conveyed through and transferred to. The Draft EA analyzes impacts of the Proposed Action relative to the No Action Alternative. The Draft EA describes changed conditions affecting certain resource categories, such as the Biological Opinions on the Continued Long Term Operation of the Central Valley Project and State Water Project, issued by NMFS and USFWS.

2-39

Comment:

The 2010-2011 Water Transfer Program environmental review by the Bureau incorporate by reference for specific facets of their review the 2003/2004 and 2007/2008 Environmental Water Account EIS/R documents. In both cases, these environmental reviews were conducted on a program whose essential purpose is to provide protection to at-risk native fish species of the Bay-Delta estuary through environmental beneficial changes in State Water Project/Central Valley Project operations at no uncompensated water cost to the Projects water users. This approach to fish protection involves changing Project operations to benefit fish and the acquisition of alternative sources of project water supply, called the EWA assets, which the EWA agencies use to replace the regular Project water supply lost by pumping reductions.

Response:

The Draft EA incorporates by reference only pertinent data from the EWA EIS/EIR where applicable to, and appropriate for, the 2010-2011 Water Transfer Program. Such incorporation by reference provides an effective means

to reduce the bulk of an environmental document without impeding agency and public review of the action. Incorporation by reference of relevant portions of a publically available document does not, however, mean that the entirety of the source document is applied to the new action, nor does such selective incorporation by reference tie the two actions together as suggested in the comment.

2-40

Comment:

Without going into further detail on the EWA program, there is no attempt by the EWA agencies to characterize its environmental review as reflective of water transfer programs generally; the EWA was a specific set of strategies whose purpose was protection of fish species of concern in the Delta, not drought aid for junior water right-holding areas of California. One consequence of this attempt to rely on the EWA EIS/R is that it makes the public's ability to understand the environmental baseline of the 2010-2011 Water Transfer Program impossible, because environmental baselines, differing purpose and need for the project, and many relevant mitigation measures are not readily available to the public. Merely referring to the EWA documents (e.g.) p. 3-47) mocks NEPA and CEQA missions to inform the public adequately about the environmental setting and potential impacts of the proposed project's actions. Moreover, a Water Transfer Program for urban and agricultural sectors is plainly not the same thing as an Environmental Water Account.

Response:

Reclamation recognizes that the purpose and actions of the EWA are different from the 2010-2011 Water Transfer Program, which is why the Draft EA was prepared. The Draft EA provides a new analysis of the Proposed Action under the 2010-2011 Water Transfer Program, which is completely separate from the EWA. However, some of the text describing facilities or resource categories would be the same for both projects, and that is where the use of incorporation by reference of specific data is included (see response to comment 2-39). All information for environmental setting and analysis relevant to the Proposed Action is included in the Draft EA.

2-41

Comment:

Another consequence is that the chains of cause and effect of an EWA versus a 2010-2011 Water Transfer Program are entirely different because of their different purposes. While the presence of water purchases, willing sellers, and requesting buyers is similar, the timing of EWA water flows are geared to enhancing and protecting fish populations; the water was to flow in Delta channels to San Francisco Bay and the Pacific Ocean. In stark contrast, the DWB's water flows focus water releases from the SWP and CVP reservoirs to be exported for deliveries in the July through September period, whereas EWA

assets would be spent year-round depending on the specific need to protect fish. EWA was about purchasing water to provide instream flows in the Delta, while the DWB is to acquire water to serve consumptive uses outside of the Delta.

Response:
Reclamation recognizes that the purpose and actions of the EWA are different from the 2010-2011 Water Transfer Program, which is why the Draft EA was prepared.

2-42

Comment:
Furthermore, to tease out the various ways in which the EWA review itself a two-binder document consisting of well over 1,000 pages could be used to provide appropriate environmental compliance for the DWB is not even attempted by DWR and the Bureau which at least has staff that could have been assigned to undertake it; yet they do not. It is therefore well beyond the reach of non-expert decision-makers and the public, and the use of the EWA EIS/R as the basic environmental review for the DWB therefore violates both NEPA and CEQA.

Response:
The EWA EIS/EIR is not providing environmental compliance for the 2010-2011 Water Transfer Program. Reclamation prepared the Draft EA to provide NEPA compliance. Any data reference in Draft EA to the EWA EIS/EIR includes a specific page number.

2-43

Comment:
Nor is any attempt made in the EWA EIS/R to characterize the EWA as a program level environmental review off of which a Water Transfer Program-like project could perhaps legitimately tier. In our view, this reliance on the EWA EIS/R obscures the environmental baselines of the DWB from public view, inappropriately conflates the purposes of two distinct environmental reviews, and flagrantly violates NEPA and CEQA. This could only be redressed by preparation of an EIS/R on the 2010-2011 Water Transfer Program.

Response:
The EA is not tiering from the EWA EIS/EIR.

2-44

Comment:
Finally, the most significant baseline condition omitted in the Bureau‘s inadequate and DWR‘s negligent reporting relates to Sacramento Valley groundwater resources, discussed in the next section.

D. Scientific uncertainties and controversy about Sacramento Valley groundwater resources merit consideration that only an EIS can provide.

There is substantial evidence that the 2010-2011 Water Transfer Program may have significant impacts on the aquifer system underlying the project and the adjacent region that overlies the Tuscan Formation. This alone warrants the preparation of an EIS.

Additionally, an EIS is necessary where "[a] project['s] … effects are 'highly uncertain or involve unique or unknown risks.'" *Blue Mountains Biodiversity Project*, 161 F.3d at 1213 (quoting 40 C.F.R. §1508.27(b)(5)). Here, the Draft EA/FONSI fails to adequately address gaps in existing scientific research on the hydrology of the aquifer system and the extent to which these gaps affect the Bureau's ability and by logical extension, DWR's ability to assess accurately the Project's environmental impacts.

Response:
Refer to the responses to comments 2-45 to 2-53 regarding groundwater baseline information. The Proposed Action includes environmental commitments and minimization measures that would reduce potential effects.

2-45
Comment:
The EA fails to describe significant characteristics of the aquifers that the 2010-2011 Water Transfer Program proposes to exploit. These characteristics are relevant to an understanding of the potential environmental effects associated with the 2010-2011 Water Transfer Program's potential extraction of up to 154,237 AF of groundwater (p, 2-4 and 3-107). First, the Draft EA/FONSI fails to describe a significant saline portion of the aquifer stratigraphy of the 2010-2011 Water Transfer Program area. According to Toccoy Dudley, former Groundwater Geologist with the Department of Water Resources and former director of the Butte County Water and Resources Department, saline groundwater aquifer systems of marine origin underlie the various freshwater strata in the northern counties of Butte, Colusa, Glenn, and Tehama (northern counties). The approximate contact between fresh and saline groundwater occurs at a depth ranging from 1500 to 3000 feet. (Dudley 2005) (A list of all references cited in these comments can be found at the end of this letter.)

Response:
Saline water is found in the deeper portions of the basin. The Proposed Action includes a maximum of about 110,469 acre feet from groundwater substitution. Extraction of this amount of water would not affect the saline portions of the aquifer system. The groundwater used in lieu of surface water would not be pumped from depths where saline water is present.

2-46

Comment:

Second, the EA fails to discuss the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the northern counties Project area. Dudley finds that the lower Tuscan aquifer located in the Butte Basin is under pressure. “It is interesting to note that groundwater elevations up gradient of the Butte Basin, in the lower Tuscan aquifer system, are higher than the ground surface elevations in the south-central portion of Butte Basin. This creates an artesian flow condition when wells in the central Butte Basin are drilled into the lower Tuscan aquifer.” (Dudley 2005). The artesian pressure indicates recharge is occurring in the up-gradient portions of the aquifer located along the eastern margin of the Sacramento Valley.

Response:

Artesian conditions can be a natural state of groundwater aquifers given various conditions (e.g., overlying materials, recharge areas, etc.). The Proposed Action does not include pumping in areas exhibiting artesian characteristics; therefore, artesian information will not be added to the affected environment.

2-47

Comment:

Third, the EA fails to describe the direction of movement of water through the Lower Tuscan Formation that underlies the northern counties. According to Dudley: “From Tehama County south to the city of Chico, the groundwater flow direction in the lower Tuscan is westerly toward the Sacramento River. South of Chico, the groundwater flow changes to a southwesterly direction along the eastern margin of the valley and to a southerly direction in the central portion of the Butte Basin.” (Dudley 2005)

Response:

The groundwater flow directions described by the commentor are acknowledged and generally known to be true. DWR develops groundwater level contour maps on a regular basis. The most recent set of contours are from the spring, summer, and fall of 2008. These maps are available at http://www.nd.water.ca.gov/PPAs/GroundwaterBasins/GroundwaterLevel/. These maps present generalized flow directions in the Sacramento Valley and are not developed for individual aquifer units. It should be noted that the groundwater flow direction does change during the year as groundwater pumping conditions vary. Due to the relatively short duration of pumping during the Proposed Action, the general, overall groundwater flow directions in the Sacramento Valley will remain similar to current conditions.

2-48

Comment:

Fourth, the Draft EA fails to disclose that the majority of wells used in the Sacramento Valley are individual wells that pump from varying strata in the aquifers. The thousands of domestic wells in the target export area that are vulnerable to groundwater manipulation and lack historic monitoring. The Bureau's 2009 DWB EA elaborated on this point regarding Natomas Central MWC (p. 39) stating that, "Shallow domestic wells would be most susceptible to adverse effects. Fifty percent of the domestic wells are 150 feet deep or less. Increased groundwater pumping could cause localized declines of groundwater levels, or cones of depression, near pumping wells, possibly causing effects to wells within the cone of depression. As previously described, the well review data, mitigation and monitoring plans that will be required from sellers during the transfer approval process will reduce the potential for this effect."

Response:

The Draft EA identifies that there are some shallow wells that could be affected. The minimization measures would reduce potential effects to shallow wells. Sellers are responsible to include detailed monitoring and mitigation plans with the transfer proposal. Reclamation will review the plans and approve the transfer if the proposed monitoring and mitigation is adequate. Reclamation staff will monitor groundwater levels through review of monthly reports provided by sellers and field visits to ensure measures are being implemented. The requirement of a monitoring and mitigation plan will be included in the transfer approval.

2-49

Comment:

As the latter statement makes clear (even though this information was excluded from the Project EA), the Bureau hopes that individual mitigation and monitoring plans created by the sellers will reduce the potential for impact, but there is no assurance in the EA that it will reduce it to a level of insignificance for the thousands of well owners in the Sacramento Valley. The Coalition questions the adequacy of individual mitigation and monitoring plans and suggests that an independent third party, such as USGS, oversee the mitigation and monitoring program and not the Bureau and DWR. After the fiasco in Butte County during the 1994 Drought Water Bank and with the flimsy, imprecise proposal for mitigation and monitoring in the 2010-2011 Water Transfer Program (see details below), the agencies lack credibility as oversight agencies.

Response:

Reclamation and, if appropriate, DWR's technical experts will review all monitoring and mitigation plans for groundwater substitution transfers prior to approval of the transfer. If the plans are not adequate, the transfer will not be approved. The requirement of a monitoring and mitigation plan will be

included in the transfer approval. Reclamation technical staff will review reports and conduct field visits to ensure that the measures are being implemented and approval conditions are met.

Reclamation and DWR currently review monthly reports for changes in groundwater levels and groundwater quality provided by 2009 Drought Water Bank participants and conduct site visits to individual wells to ensure that well criteria and requirements are met. Reports include groundwater data from the production wells and monitoring wells both in tabular and graphical formats. Data reported from production wells include groundwater levels, production volumes and flows and water quality, including specific conductance and temperature. Groundwater levels at monitoring wells are compared to historic levels to document long-term changes. Monthly reporting continues until groundwater levels recover to pre-pumping conditions. These activities will also be implemented for the 2010-2011 Water Transfer Program so that impacts to groundwater resources are minimized. A third party is not needed to ensure compliance with the program.

2-50

Comment:

Fifth, the Draft EA fails to provide recharge data for the aquifers. Professor Karin Hoover, Assistant Professor of hydrology, hydrogeology, and surficial processes from CSU Chico, found in 2008 that, "Although regional measured groundwater levels are purported to 'recover' during the winter months (Technical Memorandum 3), data from Spangler (2002) indicate that recovery levels are somewhat less than levels of drawdown, suggesting that, in general, water levels are declining." According to Dudley, "Test results indicate that the 'age' of the groundwater samples ranges from less than 100 years to tens of thousands of years. In general, the more shallow wells in the Lower Tuscan Formation along the eastern margin of the valley have the 'youngest' water and the deeper wells in the western and southern portions of the valley have the 'oldest' water," adding that "the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas." (Dudley 2005). "This implies that there is currently no active recharge to the Lower Tuscan aquifer system (M.D. Sullivan, personal communication, 2004)," explains Dr. Hoover. "If this is the case, then water in the Lower Tuscan system may constitute fossil water with no known modern recharge mechanism, and, once it is extracted, it is gone as a resource (Hoover 2008)."

Response:

Regarding long-term water levels, CH2M Hill Figure 1-4 provided by the commentor indicates that the majority of wells have stable water levels in the Proposed Action area and groundwater levels are generally not declining. Test results dating the "age" of groundwater can be a useful tool in assessing overall groundwater movement. However, this tool is only one of many available and the result should be framed in the context of the overall aquifer system and

groundwater flow directions. It is acknowledged that, in general, deeper groundwater is older than groundwater in shallower aquifer units. The age of the groundwater may not be a full indication of the amount of time it takes for water to get to that particular location. The deeper portions of the Sacramento Valley are, in general, not pumped as much as the shallower portions. Because there is little pumping, there is little change in groundwater head that would cause groundwater to flow into the deeper zones.

2-51

Comment:

All of these aquifer characteristics are important to a full understanding of the environmental impacts of the 2010-2011 Water Transfer Program because there are numerous indications that other aquifer strata associated with the Lower Tuscan Formation are being operated near the limit of overdraft and could be affected by the 2010-2011 Water Transfer Program (Butte County 2007). The Bureau has not considered this important historic information in the Draft EA. According to Dudley, the Chico area has a *"long term average decline in the static groundwater level of about 0.35 feet-per-year."* (Dudley 2007) (emphasis added.) Declining aquifer levels are not limited to the Chico Municipal area. This trend of declining aquifer levels in Chico, Durham and the Cherokee Strip is illustrated in a map submitted with this comment letter (CH2M Hill 2006).

Response:

Groundwater levels throughout the Sacramento Valley undergo normal fluctuations. These fluctuations are both short-term and long-term. Short-term fluctuations can occur during the year as the volume of groundwater pumped for irrigation and supply vary with demand. Water levels also vary due to hydrologic conditions experienced in the Sacramento Valley and surrounding watersheds. In dry or drought conditions it is typical for water levels to drop from year to year. During wetter conditions, water levels typically rebound and can increase from one year to the next. CH2M Hill Figure 1-4 provided by the commentor indicates that the majority of wells have stable water levels in the Proposed Action area, except some in Sacramento County. See response to comment 2-53 regarding transfers from the City of Sacramento. The Proposed Action does not include groundwater substitution in Butte County.

2-52

Comment:

In light of this downward trend in regional groundwater levels, the Bureau's EA should closely analyze replenishment of the aquifers affected by the proposed 2010-2011 Water Transfer Program. The Draft EA fails to provide any in-depth assessment of these issues. For example, the EA fails to discuss the best available estimates of where groundwater replenishment occurs. Lawrence Livermore National Laboratory analyzed the age of the groundwater in the northern counties to shed light on this process: Utilizing the Tritium (H3)

Helium-3 (He3) ratio, the age of each sample was estimated. Test results indicate that the age of the groundwater samples ranges from less than 100 years to tens of thousands of years, (Dudley et al. 2005). As mentioned above, Dudley opines that the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas. (2005).

Response:
See response to comment 2-50.

2-53
Comment:
Are isotopic groundwater data available for other regions in the Sacramento Valley? If so, they would be crucial for all concerned to understand the potential impacts from the proposed 2010-2011 Water Transfer Program. For example, the EA states, "The WFA area that could be affected by the Proposed Action includes only the 'North Area' bounded on the north and east by the Sacramento County line, by the Sacramento River on the west, and by the American River on the south." EA at p. 34. If this is the area in Sacramento County that is identified as most vulnerable to groundwater impacts, yet two major rivers surround it, shouldn't the Bureau understand the hydrologic relationship between the groundwater basin and the rivers? If that understanding exists, where is it presented in the EA? It is well known that the Sacramento River is already a losing river south of Princeton.

Response:
The referenced sentence in the comment does not appear in the Draft EA. The City of Sacramento is proposing a 3,000 acre-foot groundwater substitution transfer. Section 3.2.1.1 identifies that rivers and waterways in Sacramento County are losing streams because of groundwater decline. The 12 percent depletion factor will be applied to account for surface water interaction unless the City of Sacramento proposes other accepted model results in the transfer proposal. Monitoring and mitigation plans and implementation will be required to reduce any potential effects. Reclamation will be responsible for ensuring monitoring and mitigation actions are implemented to ensure significant impacts are avoided. Site specific monitoring objectives and concerns, including the applicability of stream monitoring, will be considered during the transfer review process.

2-54
Comment:
The City of Sacramento proposes to transfer surface water into the state water market and substitute 3,000 AF of groundwater (EA p.2-4), but the *Sacramento County Water Agency Water Management Plan* indicates that intensive use of this groundwater basin has resulted in a general lowering of groundwater elevations that will require extensive conservation measures to remediate. The

Sacramento County Water Agency has devised a plan to help lead the city to a sustainable groundwater use to avoid problems associated with unrestrained overuse. The most reliable strategy is to reduce demand. Integrating the City's water supply into the state water supply would obviously increase demand and make the SCWA goals impossible to achieve.

Response:
While the City of Sacramento is in Sacramento County, it is not within the boundaries of the Sacramento County Water Agency. This plan refers to a different area of Sacramento County. As with all groundwater substitution transfers, a potential transfer from the City of Sacramento would need to meet monitoring requirements to monitor changes in groundwater conditions. It would also need to include a mitigation plan that identifies a course of action if monitoring efforts indicate the potential for adverse effects.

2-55

Comment:
The Bureau should prepare an EIS that discloses the fallacies inherent in its policies and actions. The need for almost 400,000 AF of water south of the Delta springs from failed business planning. The Bureau and DWR must acknowledge this and further disclose that their agencies are willing to socialize the risks taken by corporate agribusiness and developers while facilitating private profit. Instead of asking northern California water districts and municipal water purveyors to place their own water at risk as well as the water of their neighboring communities and thousands of residential well owners, water quality, fisheries, recreation, stream flow, terrestrial habitat, and geologic stability, the Bureau and DWR must disclose all the uncertainty in the 2010-2011 Water Transfer Program and then evaluate the risks with scientific methodology. This has clearly not been done.

Response:
Refer to response to comment 2-14. This is not a Drought Water Bank. Reclamation is not soliciting sellers and buyers for transfers. Sellers and buyers will negotiate transfers on their own terms and will be willing participants in the transfers. The Draft EA includes environmental analysis for the Proposed Action, as required by NEPA.

2-56

Comment:
The Draft EA and the Draft Technical Information for Water Transfers in 2010 referenced in the EA (Bureau and DWR 2009) require willing sellers to prepare individual monitoring and mitigation plans and to conduct the monitoring with oversight provided by the Bureau and DWR (p. 3-24 and 3-25). This fails to provide the most basic framework for governmental authority to enforce the state's role as trustee of the public's water in California, let alone a

comprehensive and coordinated structure, for a very significant program that could transfer up to 154,239 AF of water from the Sacramento Valley. (Recall that DWR believes it has environmental compliance coverage for up to 600,000 AF of water sales from the Sacramento Valley, including 340,000 AF in groundwater substitution alone under the Governor‘s 2009 emergency exemption). The Draft EA further defers responsibility to willing sellers for compliance with local groundwater management plans and ordinances to determine when the effects of the proposed extraction become adverse, (p. 3-25). Each district will be required to confirm that the proposed groundwater pumping will be compatible with state and local regulations and groundwater management plans, (EA at p. 3-25). It is not acceptable that the Draft EA and the Draft Technical Information for Water Transfers in 2010 merely provide monitoring direction to willing sellers without identifying rigorous standards for the risks at hand, specific actions, acceptable monitoring and reporting entities, or funding that will be necessary for this oversight.

Response:
Refer to response to comment 2-49. Reclamation has outlined detailed requirements for approval of transfers, including monitoring before, during, and after the transfer and compliance with local plans.

2-57
Comment:
The Coalition proposes instead that the Bureau and DWR require, at a minimum, that local governments select independent third-party monitors, who are funded by surcharges on Project transfers paid by the buyers, to oversee the monitoring that is proposed in lieu of Bureaus and DWR staff, and that peer reviewed methods for monitoring be required. If this is not done, the Project‘s proposed monitoring is insufficient and cannot justify the significant risk of adverse environmental impacts.

For example, the EA and the Draft Technical Information for Water Transfers in 2010 fail to identify standards that would be used to monitor the 2010-2011 Water Transfer Program‘s impacts. It fails to identify any specific monitoring protocols, locations (particularly in up-gradient recharge portions of the groundwater basins), and why chosen locations should be deemed effective for monitoring the effects of the proposed groundwater extraction. It also fails to describe how the objectives in the Draft Technical Information for Water Transfers in 2010 will be met and by whom (EA at p.3-24 and 3-25).

Response:
Refer to response to comment 2-49.

2-58

Comment:
Moreover, it fails to provide a mitigation strategy for review and comment by the public, but defers this vital mitigation planning effort to future documents created by willing sellers, (EA at p.3-24 and 3-25) despite the fact that the EA acknowledges the potential for significant impacts.

Response:
Refer to response to comment 2-49.

2-59

Comment:
The reader is directed to the Draft Technical Information for Water Transfers in 2010 to discover the minimal objectives and required elements of the monitoring and mitigation component of the Project. The seller must implement an effective mitigation program to verify and correct problems that could arise due to transfer-related groundwater pumping, but the reader and possibly the sellers are left wondering what exactly is an effective mitigation plan since there is no particular guidance to manage and analyze the very complex hydrologic relationships internal to groundwater and connected to surface waters. Certainly the public has no idea or ability to comment, which fails the full disclosure mandate in NEPA and CEQA. Located on pages 30 and 31 of the Draft Technical Information for Water Transfers in 2010 is a brief list of a number of potential impacts [that] are sufficiently serious that they must be avoided or mitigated for a project to continue.

- Contribution to long-term conditions of overdraft;
- Dewatering or substantially reducing water levels in nonparticipating wells;
- Measurable contribution to land subsidence;
- Degradation of groundwater quality that substantially impairs beneficial uses or violates water quality standards; and
- Affecting the hydrologic regime of wetlands and/or streams to the extent that ecological integrity is impaired.

The Draft Technical Information for Water Transfers in 2010 continues with suggestions to curtail pumping lower bowls, and pay higher energy costs to ease the impacts to third party wells owners (p. 30 and 31). While this bone thrown at mitigation is appreciated, the glaring omissions are notable. The Draft Technical Information for Water Transfers in 2010 completely fails to mention, even at a very general level, how individual well owners will determine and

prove where the impacts to their wells are coming from, that water quality and health could become a significant impact for impacted wells and users and streams, and that there are no mitigation measures even mentioned for streams and wetlands. There also appears to be no consideration for species monitoring, just practices or conservation measures to minimize impacts to terrestrial wildlife and waterfowl, (Draft Technical Information p. 16).

Response:
The Draft Technical Information for Water Transfers in 2010 identifies the above impacts and goes on in the following pages to provide requirements for monitoring and mitigation to reduce or avoid the potential impacts, which are summarized in the Draft EA. Reclamation's technical experts will review all monitoring and mitigation measures to ensure that they are adequate to reduce or avoid impacts. The requirement of a monitoring and mitigation plan will be included in the transfer approval. Reclamation staff is committed to monitor and review data provided by the seller before, during, and after to transfer to ensure contractual agreements are met. The Draft EA analyzes impacts to terrestrial species and the Proposed Action contains Environmental Commitments that will minimize potential impacts.

2-60

Comment:
And please disclose why the 2009 DWB Biological Opinion is a reference to guide specific practices on page 17 of the Draft Technical Information for Water Transfers in 2010.

Response:
The 2010-2011 Water Transfer Program is similar in concept to, albeit completely separate from, the 2009 Drought Water Bank. The Technical Information for Water Transfers in 2010 was released prior to completion of the Draft EA and is intended as information for sellers and buyers. Reclamation is consulting with the USFWS for a Biological Opinion on the 2010-2011 Water Transfer Program. Transfer approval will be based on the requirements for the 2010-2011 Water Transfer Program Biological Opinion.

2-61

Comment:
Another example of the inadequacy of the proposed monitoring is that the Draft EA fails to include any coordinated, programmatic plan to monitor stream flow of creeks and rivers located in proximity to the willing sellers that will evacuate more water than used historically. The potential for immediate impacts would be very close to water sellers' wells, but the long term impacts could be more subtle and more geographically diverse. What precautions has the Bureau and DWR made for the cumulative impacts that come not only from this two-year Project, but in combination with the water sales from the last three years and

those that are planned by the Bureau into the future (see list in g, iv below)? Bureau and DWR water transfers are not just one or two year transfers, but many serial actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA.

As discussed above, adequate monitoring is vital to limit the significant risks posed by the Project to the health of the region‘s groundwater, streams, and fisheries (more discussion below). One unfortunate example is the EA‘s focus on groundwater substitution impacts that reflect the priority for water accounting and payment accuracy as opposed to the impacts to the groundwater system and streams. The implementation of groundwater substitution pumping can lower the groundwater table and may change the relative difference between the groundwater and surface water levels. This change has a direct impact on the volume that a seller receives credit for being transferred, (EA p.3-22 and 3-23). Moreover, to the extent this Project is conceived as a two-year drought or hardship program that will provide knowledge for future groundwater extraction and fallowing, its failure to include adequate monitoring protocols is even more disturbing and creates the risk of significant long-term and even irreversible impacts from the Project.

Response:
The Proposed Action includes one or two year water transfers, negotiated between willing sellers and buyers. The Proposed Action is not part of a larger program. Cumulative effects are analyzed in Section 3.18 of the Draft EA. Reclamation has monitored effects from recent water transfers. Sellers are required to monitor groundwater levels until water levels return to pre-pumping conditions. If an effect is identified, mitigation is required. The mitigation and monitoring plans are necessary for transfer approval. Site specific monitoring objectives and concerns, including the applicability of stream monitoring will be considered during the transfer review process. Reclamation applies a 12 percent depletion factor to transfer amounts to account for groundwater-surface water interaction. Transfers in 2009 did include similar provisions, and no injury was reported associated with these transfers.

2-62

Comment:

a. The Bureau‘s assertion that the Project may be modified or halted in the event of significant adverse impacts to hydrologic resources is an empty promise in light of the wholly inadequate monitoring provided for in the 2010-2011 Water Transfer Program. Knowing that the Bureau and DWR knowingly violated the X2 standard in the Delta in February 2009 does little to instill confidence from the Coalition in non-specific program and mitigation criteria.

Response:
Reclamation is committed to minimizing potential impacts from the Proposed Action, including halting transfers if and as appropriate. Reclamation will not approve transfers proposals that do not have adequate monitoring and mitigation plans in place.

2-63
Comment:
The EA repeatedly illustrates that there is potential for significant injury to other groundwater users, water quality, streams, flora and fauna, and the soil profile (p. 3-12, 3-23, 3-24, 3-53, 3-54). Chapter three contains numerous examples that illustrate the need for an EIS since there is insufficient, comprehensive planning for, let alone preparation to mitigate, adverse environmental impacts:

- *Acquisition of water via groundwater substitution or cropland idling would change the rate and timing of flows in the Sacramento River compared to the No Action Alternative.*

- *In Figure 3.2-2, groundwater substitution pumping results in a change in the groundwater/surface water interaction characteristics. In this case, the water pumped from a groundwater well may have two impacts that reduce the amount of surface water compared to pre-pumping conditions. These mechanisms are:*

    - *Induced leakage. The lowering of the groundwater table causes a condition where the groundwater table is lower than that the water level in the surface water. This conditions causes leakage out of the surface water.*

    - *Interception of groundwater. The placement of groundwater substitution pumping may intercept groundwater that may normally have discharged to the surface water (i.e., water that has already percolated into the ground may be pumped out prior the water reaching the surface water and being allowed to enter the "gaining" stream).*

- *The changes in groundwater flow patterns (e.g., direction, gradient) due to increased groundwater substitution pumping may result in changes in groundwater quality from the migration of reduced quality water.*

- *Groundwater substitution transfers would alter ground water levels and potentially affect natural and managed seasonal wetlands and riparian communities, upland habitats and wildlife species depending on these habitats.*

- *Rice land idling transfers would reduce habitat and forage for resident and migratory wildlife populations.*

- *Water transfers could change reservoir releases and river flows and potentially affect special status fish species and essential fish habitat.*

- *Water transfers could affect fisheries and aquatic ecosystems in water bodies, including Sacramento and American River systems, the Sacramento-San Joaquin Delta, San Luis Reservoir, and DWR and Metropolitan WD reservoirs in southern California.*

- *Increased groundwater pumping for groundwater substitution transfers would increase emissions of air pollutants.*

The Bureau thus recognizes the potential for significant decline in groundwater levels as a result of the proposed activity (EA at p. 3-23, 3-24, 3-53, 3-54). This acknowledgement alone is sufficient to require a full EIS. Moreover, as detailed below, the monitoring proposed by the 2010-2011 Water Transfer Program is so inadequate that there can be no guarantee that adverse impacts will be discovered, or that they will be discovered in time to avoid significant environmental impacts.

Response:
The above impact statements are followed by text in the Draft EA that presents the analysis of each issue and provides the basis for concluding that the subject impact is either not substantial or is subject to the specified minimization measures to reduce or avoid potential impacts. The above statements are not intended to be standalone, as presented in the comment.

2-64
Comment:
Glenn County will have groundwater substitution if the Project moves forward. The County realizes that its management plan may not be sufficient for the challenges presented by this Project and the myriad others and cautions that "[s]ince the groundwater management plan is relatively new and not fully implemented, the enforcement and conflict resolution process has not been vigorously tested," (http://www.glenncountywater.org/management_plan.aspx). Moreover, the Glenn County Groundwater Management Plan does not have any provisions to monitor or protect the environment. The 2010-2011 Water Transfer Program EA fails to disclose the inadequacies of this and other local ordinances and plans.

b. Monitoring based on the Glenn County Groundwater Management Plan is inadequate. Since the Bureau omitted discussion of the Glenn County Groundwater Management Plan in the 2010-2011 Water Transfer Program…

Response:
The minimization measures require compliance with existing water management plans. The Draft EA does not critique or rewrite existing plans developed by local governments. DWR has worked extensively in Glenn County, with the Glenn Colusa Irrigation District, to implement a monitoring program for groundwater resources. This monitoring network will be used to assess potential impacts to groundwater by the Proposed Action. Reclamation will review monitoring programs in the transfer proposal to determine if they are adequate prior to approval.

2-65
Comment:
But the Butte County Department of Water and Resource Conservation explains that local plans are simply not up to the task of managing a regional resource:

Glenn County does not have an export ordinance because it relies on Basin Management Objectives (BMO) to manage the groundwater resource, and subsequently to protect third parties from transfer related impacts. Recently, Butte County also adopted a BMO type of groundwater management ordinance. Butte County, Tehama County and several irrigation districts in each of the four counties have adopted AB3030 groundwater management plans. All of these groundwater management activities were initiated prior to recognizing that a regional aquifer system exists that extends over more than one county and that certain activities in one county could adversely impact another. Clearly the current ordinances, AB3030 plans, and local BMO activities, which were intended for localized groundwater management, are not well suited for management of a regional groundwater resource like that theorized of the Lower Tuscan aquifer system.

Response:
The minimization measures require compliance with existing water management plans. The Draft EA does not critique or rewrite existing plans developed by local governments. The Proposed Action does not include groundwater substitution transfers in Butte County.

2-66
Comment:
Not only is there a failure to discuss real time monitoring for subsidence, there also is no discussion regarding delayed subsidence that should also be monitored according to the findings of Dr. Kyran Mish, Presidential Professor, School of Civil Engineering and Environmental Science at the University of Oklahoma. Dr. Mish notes: It is important to understand that all pumping operations have the potential to produce such settlement, and when it occurs with a settlement magnitude sufficient enough for us to notice at the surface, we call it subsidence, and we recognize that it is a serious problem (since such

settlements can wreak havoc on roads, rivers, canals, pipelines, and other critical infrastructure), (Mish 2008). Dr. Mish further explains that [b]ecause the clay soils that tend to contribute the most to ground settlement are highly impermeable, their subsidence behavior can continue well into the future, as the rate at which they settle is governed by their low permeability, Id. Thus simple real-time monitoring of ground settlement can be viewed as an unconservative measure of the potential for subsidence, as it will generally tend to underestimate the long-term settlement of the ground surface, Id. (emphasis added).

The EA acknowledges the existence and cause of serious subsidence in one area of the valley. The area between Zamora, Knights Landing, and Woodland has been most affected (Yolo County 2009). Subsidence in this region is generally related to groundwater pumping and subsequent consolidation of aquifer sediments, (EA p. 3-13). This fact alone illustrates the need for more extensive analysis throughout the export area in an EIS.

Response:
The process of subsidence results from the changing of the pore pressure of water within the aquifer's soil matrix. Groundwater pumping can cause a change in this pressure allowing for the structure of the soil matrix to compress, resulting in subsidence. The commentor correctly notes that the process of subsidence can be slow due to the low hydraulic conductivity of the soil materials (e.g., clay). This low hydraulic conductivity can result in a long period of time for the pore pressures in the aquifer to change. The process of real-time subsidence monitoring will measure any changes in ground surface elevation, whether the subsidence is short term or long term. Text has been clarified in the Final EA in Section 3.2.2.2.

2-67

Comment:
The 2010-2011 Water Transfer Program EA fails to require stream flow monitoring. The 2009 DWB EA/FONSI deferred the monitoring and mitigation planning to willing sellers, but even that requirement has been completely eliminated. We can't emphasize enough the importance of frequent and regular stream flow monitoring by either staff of the project agencies or a third, independent party such as the USGS, paid for by Project transfer surcharges mentioned above. It is clear from existing scientific studies and the EA that the Project may have significant impacts on the aquifers replenishment and recharging of the aquifers, so the 2010-2011 Water Transfer Program should therefore require extensive monitoring of regional streams. The radius for monitoring should be large, not the typical two to three miles as usually used by DWR and the Bureau.

Response:
The CVP and SWP monitor stream flow in many northern California waterways to compare with Delta inflow as part of Project operations. This monitoring effort focuses on operation, but would also provide some feedback if stream depletions are larger than expected. Reclamation has considered groundwater-surface water interaction and will apply a 12 percent depletion factor to each groundwater substitution transfers to account for potential effects. Local hydrologic models may also be used to determine potential depletion.

2-68
Comment:
As evident in the following conclusory assertions, the Draft EA/FONSI fails to define the radius of influence associated with the aquifer testing and thus entirely fails to identify potential significant impacts to salmon:

> "An objective in planning a groundwater substitution transfer is to ensure that groundwater levels recover to their typical spring high levels under average hydrologic conditions. Because groundwater levels generally recover at the expense of stream flow, the wells used in a transfer should be sited and pumped in such a manner that the stream flow losses resulting from pumping peak during the wet season, when losses to stream flow minimally affect other legal users of water,"(EA p. 2-7).

As mentioned above, stream flow monitoring is not a requirement of the Project, which is unfathomable. Monitoring of flow on streams associated with the Lower Tuscan Formation is particularly important to the survival of Chinook salmon which use these streams of interest to spawn and where salmon fry rear. Intensive groundwater pumping would likely lower water table elevations near these streams of interest, decreasing surface flows, and therefore reducing salmon spawning and rearing habitat through dewatering of stream channels in these northern counties. This would be a significant adverse impact of the Project and is ignored by the EA.

Response:
As specified in the Environmental Commitments for the Project:

> *Well reviews and monitoring and mitigation plans will be implemented under the Proposed Action to minimize potential effects of groundwater substitution.*

The monitoring and mitigation measures are outlined in the Draft Technical Information for Water Transfers in 2010 (Reclamation and DWR 2009). This document specifies that it will be assumed that stream flow losses due to groundwater pumping for transfers are 12 percent of the amount pumped for transfer. Since stream flow is a combination of flows from upstream areas plus or minus gains or losses to groundwater, this would not translate into a direct

loss of 12 percent of surface flow. For example, mean flows in the Sacramento River during July through September range from 13,700 to 8,600 cfs, with the lowest monthly average flow being 6,052 in the last 20 years (based on USGS gage 11377100). If the entire 110,409 acre-feet allowable under groundwater substitution were pumped during a given year, then stream flow in the Sacramento River would be reduced by about 152 cfs, or a maximum of 3 percent. Such minor flow reductions are unlikely to adversely affect spawning or rearing habitat for salmonids.

Additionally, the CVP and SWP monitor stream flow in many northern California waterways to compare with Delta inflow as part of Project operations. This monitoring effort focuses on operation, but would also provide some feedback if stream depletions are larger than expected.

With these measures there would be no substantial effect on stream flows, and thus there would be no effect on salmon or their habitat from the project.

2-69

Comment:

The Draft EA acknowledges the potential for impacts to special status fish species from altered river flows and commits to maintaining flow and temperature requirements already in place (p. 3-59). The coalition would like to have greater assurance of a commitment considering that the Bureau and DWR failed to meet the X2 standard in February 2009. The Bureau and DWR should make X2 compliance and streams of interest monitoring in real time part of their permit amendment applications to the SWRCB this spring. If stream levels are affected by groundwater pumping, then pumping would cease.

Response:

The Draft EA analyzed impacts to special status species and found them not to be significant. Comment noted otherwise.

2-70

Comment:

Unfortunately, the Draft EA fails to anticipate possible stream flow declines in important salmon rearing habitat in the 2010-2011 Water Transfer Program area. Many important streams, such as Mud Creek, are located within the 2010-2011 Water Transfer Program and flows through probable Tuscan recharge zones, yet are not mentioned in the EA (also see comments above regarding Rock Creek). While a charged aquifer is likely to add to base flow of this stream, a de-watered aquifer would pull water from the stream. According to research conducted by Dr. Paul Maslin, Mud Creek provides advantageous rearing habitat for out-migrating Chinook(1996). Salmon fry feeding in Mud Creek grew at over twice the rate by length as did fry feeding in the main stem of the Sacramento River. *Id.*

Another tributary to the Sacramento River, Butte Creek, hosts spring-run Chinook salmon, a threatened species under the Endangered Species Act. 64 Fed. Reg. 50,394 (Sept. 16, 1999). Butte Creek contains the largest remaining population of the spring-run Chinook and is designated as critical habitat for the species. *Id*. at 50,399; 70 Fed. Reg. 52,488, 52,590-91 (Sept. 2, 2005). Additionally, Butte Creek provides habitat for the threatened Central Valley steelhead. *See* 63 Fed. Reg. 13,347 (Mar. 19, 1998); 70 Fed. Reg. at 52,518. While Butte Creek is mentioned in the EA (p. 2-11, 3-4, 3-49, 3-57), the only protect afforded this vital tributary are statements that cropland idling will not occur adjacent to it, yet that is contradicted on page 3-19. The Bureau should not overlook the importance of rearing streams, and should not proceed with this Project unless and until adequate monitoring and mitigation protocols are established.

Existing mismanagement of water in California‘s rivers, creeks, and groundwater has already caused a precipitous decline in salmon abundance. There is no mention of the fall-run salmon numbers in the main stem Sacramento River or its essential tributaries despite the fact that their numbers dropped precipitously in 2007 (see graphic below) 2008, and 2009. After the commercial salmon fishery was closed for two years for fear of pushing these fish to extinction, scientists are waiting until February 2010 to determine if the commercial and sport fishing seasons will open this year. As noted above, the EA casually asserts that maintaining flow and temperature requirements in the main stem will be sufficient to protect aquatic species, but it fails to consider the impacts of almost 400,000 AF of water transfers, fallowing, and groundwater substitution on the tributaries. How much additional pumping does the Project represent, given CVP and SWP contractual commitments, available reservoir supplies, and other environmental restrictions south of the Delta? The EA and DWR‘s missing environmental review are silent on this.

Where are the data to support assertions that impacts to aquatic species will be below a level of significance? Habitat values are also essential to many other special status species that utilize the aquatic and/or riparian landscape including, but not limited to, giant garter snake, bank swallow, greater sandhill crane, American shad, etc. Where is the documentation of the potential impacts to these species?

Response:
See response to comment 2-68. Page 3-19 contains environmental setting information and makes no contradictory statements. Sections 3.6, 3.7, 3.8, and Appendices B and C evaluate potential effects to vegetation and wildlife, fishery resources, and special status species.

2-71

Comment:

EA fails to identify and address the significant unknown risks associated with this Project. There are substantial gaps in scientists understanding of how the aquifer system recharges.

The EA fails to reveal the scientifically known and unknown characteristics of the Lower Tuscan aquifer. Expert opinion and experience is offered by Professor Karin Hoover from CSU Chico who asserts that: [T]o date there exists no detailed hydrostratigraphic analysis capable of distinguishing the permeable (water-bearing) units from the less permeable units within the subsurface of the Northern Sacramento Valley. In essence, the thickness and extent of the water-bearing units has not been adequately characterized. (p. 1)

Though the Project fails to disclose the limitations in knowledge of the geology and hydrology of the northern counties, it was disclosed in 2008 in the EA for the *Stony Creek Fan Aquifer Performance Testing Plan* (Testing Plan EA). It revealed that there is also limited understanding of the interaction between the affected aquifers, and how that interaction will affect the ability of the aquifers to recharge. The Testing Plan EA provides:

> *The Pliocene Tuscan Formation lies beneath the Tehama Formation in places in the eastern portion of the SCF Program Study Area, although its extent is not well defined. Based on best available information, it is believed to occur at depths ranging between approximately 300 and 1,000 feet below ground surface. It is thought to extend and slope upward toward the east and north, and to outcrop in the Sierra Nevada foothills. The Tuscan Formation is comprised of four distinct units: A, B C and D (although Unit D is not present within the general project area). Unit A, or Upper Tuscan Formation, is composed of mudflow deposits with very low permeability and therefore is not important as a water source. Units B and C together are referred to as the Lower Tuscan Formation. Very few wells penetrate the Lower Tuscan Formation within the SCF Program study area.*

(The Testing Plan EA/FONSI at p. 23). The Tehama Formation, however, generally behaves as a semi-confined aquifer system and the EA contains no discussion of its relationship with the adjoining formations. Nor is there any discussion of the role of the Pliocene Tehama Formation as the primary source of groundwater produced in the area, (DWR 2003).

The EA fails to offer any in-depth analysis of which strata in the aquifers will be most likely affected by the 2010-2011 Water Transfer Program‘s proposed extraction of groundwater. Thousands of domestic wells are in the upper layers of the aquifers are not even considered in the EA. In addition, the EA provides

no assessment of the interrelationship of varying strata in the aquifers in the Sacramento Valley or between the aquifers themselves.

Response:
Reclamation acknowledges that the hydrogeologic nature of the Sacramento Valley has not been fully characterized. The description of the Tuscan and Tehama formations presented by the commentor are noted to be at least one of the current understandings of the hydrogeologic composition of the Sacramento Valley. Monitoring and mitigation plans and implementation will be required at the sellers cost. Reclamation will be responsible for ensuring monitoring and mitigation actions are implemented to ensure significant impacts are avoided. Site specific monitoring objectives and concerns, including the applicability of stream monitoring, will be considered during the transfer review and approval process.

2-72
Comment:
The EA fails to provide basic background information regarding the recharge of groundwater. The documents states, Groundwater is recharged by deep percolation of applied water and rainfall infiltration from streambeds and lateral inflow along the basin boundaries, (EA p. 3-10). How was the conclusion reached that applied water leads to recharge of the aquifer? Where are the supporting data? This claim is unsubstantiated by any of the work that has been performed to date. For example, the RootZone water balance model used by a consultant with Glenn Colusa Irrigation District, Davids Engineering, was designed to simulate root zone soil moisture. It balances incoming precipitation and irrigation against crop water usage and evaporation, and whatever is left over is assigned to deep percolation. Deep percolation in this case means below the root zone, which is anywhere from a few inches to several feet below the surface, depending on the crop. There is absolutely no analysis that has been performed to insure that applied water does, indeed, recharge the aquifer. For example, if the surface soils were to dry out, water that had previously migrated below the root zone might be pulled back up to the surface by capillary forces. In any case, the most likely target of the deep percolation water in the Sacramento Valley is the unconfined, upper strata of the aquifer and possibly the Sacramento River. The EA has not demonstrated otherwise.

A public hearing concerning the Monterey Agreement was held in Quincy on November 29, 2007 and hosted by DWR. At the hearing Barbara Hennigan presented the following testimony: So for the issues of protecting the water quality, protecting the stream flow in the Sacramento, one of the things that we have learned is that the Sacramento River becomes a permanently losing stream at the Sutter buttes. When I first started looking at the water issues that point was at Grimes south of the [Sutter B]uttes, now it is at Princeton, moving north of the buttes. As the Sacramento becomes a losing stream farther and farther north because of loss of the Lower Tuscan Aquifer, that means that it, there will

be less water that the rest of the State relies on", (http://www.water.ca.gov/environmentalservices/docs/mntry_plus/comments/Quincy.txt). How and when will the Bureau and DWR address this enormously important condition and amplify the risk to not only the northstate, but the entire State of California?

Response:
Typical irrigation practices often result in the application of water that is in excess of the volume of water required by crop's evapotranspiration requirements. The difference in these volumes water is generally understood to percolate to the water table.

The location of the gaining and losing portions of a stream or river is governed by water levels in the surface water with respect to adjacent groundwater levels in the aquifer where the stream is incised. It is acknowledged that a decline in groundwater levels can change a gaining stream into a losing stream. However, monitoring and mitigation plans and implementation will be required at the sellers cost. Reclamation will be responsible for ensuring monitoring and mitigation actions are implemented to ensure significant impacts are avoided. Site specific monitoring objectives and concerns, including the applicability of stream monitoring will be considered during the transfer review process.

2-73
Comment:
On pages 3-10, 3-12, and 3-13 of the EA the Sierra Nevada [mountain range] and "Coast ranges" are identified, but there is no mention of the southern Cascade Range that is a prominent geologic feature of the northern Sacramento Valley and a significant contributor to the hydrology of the region.

Response:
Reference to the Cascade Range added.

2-74
Comment:
Page 3-12 mentions "major tributaries" to the Sacramento River, but omits the northern rivers the McCloud and the Pit. It also mentions "Stony, Cache, and Putah Creeks" but fails to mention Battle, Mill, Big Chico, and Butte creeks. These omissions again reflect an odd lack of understanding of the Cascade Range.

Response:
Reference to the McCloud and Pit Rivers and the Battle, Mill, Big Chico, and Butte creeks added.

2-75

Comment:
The EA states quite straightforwardly on page 3-12 that, "Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage." This knowledge alone requires substantive environmental review under NEPA and CEQA.

Response:
Impacts associated with the Proposed Action were analyzed and with implementation of the minimization measures described in the EA were determined to be less than significant.

2-76

Comment:
Page 3-12. "Groundwater production in the basin has recently been estimated to be about 2.5 million acre-feet or more in dry years." What is the citation for this assertion?

Response:
The NCWA 2006 citation included in the Draft EA applies to the second and third sentences of this paragraph. Sentence has been revised to reflect the 2.5 million acre-foot estimate being an annual average.

2-77

Comment:
Page 3-12. "Historically, groundwater levels in the Basin have remained steady, declining moderately during extended droughts and recovering to pre-drought levels after subsequent wet periods. DWR extensively monitors groundwater levels in the basin. The groundwater level monitoring grid includes active and inactive wells that were drilled by different methods, with different designs, for different uses. Types of well use include domestic, irrigation, observation, and other wells. The total depth of monitoring grid wells ranges from 18 to 1,380 feet below ground surface." As presented above, groundwater levels have been changing, historically. Since the Bureau and DWR have access to a monitoring grid, for NEPA and CEQA compliance, they must present current facts, not general statements that relate to social science.

Response:
Data has been added to demonstrate historical trends described in the text.

2-78

Comment:
Page 3-12. “In general, groundwater flows inward from the edges of the basin and south parallel to the Sacramento River. In some areas there are groundwater depressions associated with extraction that influence local groundwater gradients.” Where are the groundwater depressions? How have they affected groundwater gradients? How will the Project exacerbate a negative existing condition?

Response:
The presence of localized groundwater depressions in multiple locations in the basin is understood. Implementation of the Proposed Action with the minimization measures described in the EA would not substantially affect any existing groundwater depressions.

2-79

Comment:
Page 3-12. “Prior to the completion of CVP facilities in the area (1964-1971), pumping along the west side of the basin caused groundwater levels to decline. Following construction of the Tehama-Colusa Canal, the delivery of surface water and reduction in groundwater extraction resulted in a recovery to historic groundwater levels by the mid to late-1990s.” Please provide the citation(s).

Response:
Citation to the 2004 Final Environmental Impact Statement/Environmental Impact Report Environmental Water Account has been added in the Final EA.

2-80

Comment:
Pg 3-15 "According to the SWRCB, there are no elevated concentrations of arsenic or selenium in the Sacramento Groundwater Basin." The GAMA domestic well Project, Tehama County Focus Area, 2009, Arsenic in Domestic and Public Wells indicates variable levels of arsenic in the cited basin. The study found that, "Fourteen percent of the wells [in the Tehema County focus area] had concentrations of both arsenic and iron above their associated CDPH MCLs or secondary MCLs."

Response:
Specific reference to the lack of elevated arsenic and selenium levels in the Sacramento Groundwater Basin has been removed. Arsenic levels noted in the comment would not be encountered by the Proposed Action due to the lack of groundwater substitution in Tehema County. Minimization measures developed for the Proposed Action and described in the EA will prevent any substantial

arsenic related effects from being generated by the Proposed Action's reliance on groundwater substitution elsewhere in the basin.

2-81

Comment:
Page 3-15. "The State Water Code (Section 1745.10) requires that for short term water transfers, the transferred water may not be replaced with groundwater unless the following criteria are met (SWRCB 1999)…" The Project is not a short term water transfer, but a set of serial actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA.

Response:
This comment refers to the regulatory background section of groundwater resources (Section 3.2.1.2). This section is not determining whether or not the transfers in the 2010-2011 Water Transfer Program are short term transfers. It is only explaining that State Water Code (Section 1745.10) applies to short term transfers.

2-82

Comment:
Page 3-16. "California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred. These principles must be met for approval of water transfers." The disclosures and analyses contained in the EA, FONSI, and its appendices are inadequate to satisfy the California Water Code requirements and the Bureau's requirements under NEPA. DWR has clearly failed its obligations under CEQA by providing no disclosure or analysis.

Response:
The Draft EA analyzes impacts to environmental resources, as required by NEPA. Reclamation is required to comply with CVPIA when approving and implementing water transfers.

2-83

Comment:
Regarding surface water reservoir operations in support of the 2010-2011 Water Transfer Program, we have several questions and concerns:

- Regarding fisheries, we note that the Bureau intends to comply with the State Water Resources Control Board's Water Rights Orders 90-05

and 91-01 in order to provide temperature control at or below 56 degrees Fahrenheit for anadromous fish, their redds, and hatching wild salmonid fry, and to provide minimum instream flows of 3,250 cubic feet per second (cfs) between September 1 and February 28, and 2,300 cfs between March 1 and August 31. How will the Bureau and DWR comply with Fish and Game Code Section 5937 to keep fish populations below and above their dams in good condition, as they approve transfers of CVP water from willing CVP contractors to willing buyers? We urge this compliance effort be integrated with the streams of interest and groundwater monitoring programs we recommended above.

Response:
Reclamation will meet the provisions of CDFG Code 5937 by meeting the operation requirements for their facilities at Shasta Dam, Folsom Dam, in the Delta and elsewhere. These operation requirements were developed through consultation with CDFG and NMFS and other agencies to provide conditions suitable to keep fish in good condition. The Proposed Action will be managed so that these requirements will continue to be met.

2-84

Comment:
We also find confusing the EA's treatment of instream flows for fisheries. On one hand, minimum flows and temperature criteria established in the above-mentioned water rights orders is to be adhered to by the Bureau for the Sacramento River. The necessity for April and May storage is not well explained.

Response:
The Proposed Action allows for water that would have been used on idled fields in April through June to be transferred to willing buyers. However, there is no available capacity at the CVP or SWP pumps during this period. This water could potentially be retained in Shasta Reservoir and released during the July through September period when there is capacity at the pumps. However, for this to occur, the Delta must be in a balanced condition and Reclamation must continue to meet outflow and temperature requirements in the Sacramento River.

Storage may not be necessary if water is transferred to parties that do not require use of Jones or Banks Pumping Plants, such as transfers to East Bay Municipal Utility District (through its facility at Freeport) or to users on the North Bay Aqueduct (through the Barker Slough Pumping Plant).

2-85

Comment:

Concerning the social and economic effects of the proposed 2010-2011 Water Transfer Program, crop idling transfers will delete fields from production and result in employment impacts on Sacramento Valley's agricultural labor market at a time when the national recession is at its worst. The lack of descriptive information about what crops are to be idled by specific "willing sellers" means that a reasonably plausible estimate of employment impacts in the Sacramento Valley are unavailable, rendering the EA inadequate from this standpoint. Has the Bureau reviewed the President's policies on economic recovery to be certain that its water transfer program that would shift employment impacts from one Valley to another rather than work to increase employment generally is consistent with the intent of the President and Congress? What would be the effects of employment shifting on the poverty rates of Sacramento Valley counties? Such an estimate, provided with basic information about what acreages of specific crops are to be idled, is within the reach of the Bureau to make.

Response:

The Draft EA lists potential crops to be idled in Table 2-3 and indicates that rice would likely be the crop idled most. The Proposed Action is a two-year action and would not cause substantial effects to employment. All effects would be temporary and cease after 2011. The Proposed Action includes an environmental commitment to reduce potential economic effects. The approval process limits the quantity of irrigated acreage that can be idled within each county to minimize the economic impacts of proposed transfers.

2-86

Comment:

On its own terms, the Bureau‘s EA makes no attempt to establish baseline agricultural crop acreages for each agricultural county offering or seeking DWB water in order to calculate and apply its 20 percent threshold for limiting economic impacts to agriculture in selling counties. Moreover, this 20 percent threshold needs to be incorporated into the description of the Proposed Action Alternative, since it appears to be an integral part of DWB actions.

Response:

The 20 percent limitation on crop idling per county is included in the project description as an environmental commitment. Actual acreage limitations will be calculated for each county by Reclamation during the transfer review process. Sellers are required to provide detailed cropping patterns to determine both the eligible crops for transfer and the 20 percent threshold. Transfers will not be approved without adequate information.

2-87

Comment:
Regarding public health and safety, the EA negligently denies the potential for impacts (p.3-1). Fluctuating domestic wells can lead to serious contamination from heavy metals and non-aqueous fluids. Additionally, there are numerous hazardous waste plumes in Butte County, which could easily migrate with the potential increased groundwater pumping proposed for the Project. All of this must be disclosed and analyzed.

Response:
Groundwater minimization measures will detect and mitigate any potential water quality issues. Wells with potential water quality problems will not be allowed to participate in the transfer. If water quality problems are detected during the transfer, the transfer will be halted. The Proposed Action does not include groundwater substitution transfers in Butte County.

2-88

Comment:
In general, the 2010-2011 Water Transfer Program EA/FONSI and by logical implication, DWR‘s actions consistently avoids full disclosure of existing conditions and baseline data, rendering their justifications for the 2010-2011 Water Transfer Program at best incoherent, and at worst, dangerous to groundwater users and resources, and to vulnerable fisheries in tributary streams of the Sacramento River.

Response:
As required by NEPA, the information contained in the affected environment is adequate to properly assess potential impacts. The affected environment should be brief and is not required to be an encyclopedic discussion of the resource.

2-89

Comment:
The Draft EA/FONSI does not reveal that the current Project is part of a much larger set of plans to develop groundwater in the region, to develop a “conjunctive” system for the region, and to integrate northern California‘s groundwater into the state‘s water supply. These are plans that the Bureau, together with DWR and others, have pursued and developed for many years. Indeed, one of the plans the short-term phase of the Sacramento Valley Water Management Program is the subject of an ongoing scoping process for a Programmatic EIS that has not yet been completed.

Response:
The Proposed Action is a two year action to transfer water from north of Delta sellers to south of Delta buyers and is not part of a larger regional conjunctive system. The Sacramento Valley Water Management Program is not analyzed as

a part of this EA's cumulative analysis because it will not be implemented while the 2010-2011 Water Transfer Program is underway. Residual impacts would not occur after the Proposed Action is implemented and would not affect implementation of the Sacramento Valley Water Management Program.

2-90

Comment:

In assessing the significance of a project's impact, the Bureau must consider [c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement. 40 C.F.R. §1508.25(a)(2). A "cumulative impact" includes "the impact on the environment which results from the incremental impact of the action when added to *other past, present and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Id.* §1508.7. The regulations warn that "[s]ignificance cannot be avoided by terming an action temporary or by breaking it down into small component parts." *Id.* §1508.27(b)(7).

An environmental impact statement should also consider "[c]onnected actions." *Id.* §1508.25(a)(1). Actions are connected where they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." *Id.* §1508.25(a)(1)(iii). Further, an environmental impact statement should consider "[s]imilar actions, which when viewed together with other *reasonably foreseeable or proposed agency actions,* have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." *Id.* §1508.25(a)(3) (emphasis added).

As detailed below, instead of assessing the cumulative impacts of the Proposed Action as part of the larger program that even the Bureau has recognized should be subject to a programmatic EIS (but for which no programmatic EIS has been completed), the Bureau has attempted to separate this program and approve it through an inadequate EA. Further, the Bureau has failed to take into account the cumulative effects of other groundwater and surface water projects in the region, the development of "conjunctive" water systems, and the anticipated further integration of Sacramento Valley surface and ground water into the state water system.

Response:

See response to comment 2-89. This EA analyzed the two year 2010-2011 Water Transfer Program's interaction with programs/projects whose implementation was reasonably foreseeable during the Proposed Action's two year period of implementation. Residual impacts would not occur after the Proposed Action is implemented and would not affect implementation of other related, cumulative programs.

2-91

Comment:

Even if an EIS were not clearly required here, the Draft EA/FONSI prepared by the Bureau violates NEPA on its own. As discussed above, the Draft EA does not provide the analysis necessary to meet NEPA's requirements and to support its proposed finding of no significant impact. Further, as outlined above, the draft document fails to provide a full and accurate description of the proposed Project, its relationship to myriad other water transfer and groundwater extraction projects, its potentially significant adverse effects on salmon critical habitat in streams of interest tributary to the Sacramento River, and an assessment of the cumulative environmental impacts of the 2010-2011 Water Transfer Program when considered together with other existing and proposed water programs.

Response:

The Draft EA includes all sections and analyses required by NEPA, including a description of the Proposed Action, discussion of impacts to fishery resources, cumulative projects and cumulative effects.

2-92

Comment:

Additionally, the Draft EA/FONSI fails to provide sufficient evidence to support its assertions that the 2010-2011 Water Transfer Program would have no significant impacts on the human or natural environments, neither decision makers nor the public are fully able to evaluate the significance of the 2010-2011 Water Transfer Program's impacts. These informational failures complicate the Coalition's efforts to provide meaningful comments on the full extent of the potential environmental impacts of the DWB and appropriate mitigation measures. Accordingly, many of the Coalition's comments include requests for additional information.

Response:

The Draft EA includes information relevant to analyzing the Proposed Action. Information included in an EA is not required nor recommended to be encyclopedic. Additional information requests from the Coalition are added to the Final EA, as relevant, or responded to in the responses to comment included in this section.

2-93

Comment:

NEPA's implementing regulations call for analysis of alternatives is the heart of the environmental impact statement, 40 C.F.R. §1502.14, and they require an analysis of alternatives within an EA. *Id.* §1408.9. The statute itself specifically requires federal agencies to:

> *study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning available uses of resources.*

42 U.S.C. §4332(2)(E). Here, because the Bureau's EA considers only the proposed Project and a "No Action" alternative, the EA violates NEPA.

Response:
Several options were considered at the beginning of the planning process for the currently Proposed Action. In addition to the two options that were advanced into the EA analysis, including groundwater substitution and crop idling/crop shifting, preliminary consideration was given to other options such as water reservoir reoperation and implementation of water conservation measures. When Reclamation identified the option of reservoir reoperation early in the planning process, no interest in this option was expressed by CVP water sellers or buyers. Inasmuch as Reclamation's role in the Proposed Action is to review and approve, if acceptable, water transfer agreements that originate and are consummated directly between willing water sellers and buyers, the inclusion of an option where no interest has been expressed by either party does not represent a reasonable alternative for the EA. With regard to the option involving implementation of water conservation measures, such a measure is difficult and can be very time consuming to quantify for purposes of water transfers between willing sellers and buyers, as described above in Response to Comment 2-37. The two options that were advanced into the EA analysis, along with the No Action Alternative, are considered to provide a reasonable range of alternatives relative to the currently Proposed Action.

2-94
Comment:
Even more significantly, there are numerous other alternative ways to ensure water is allocated reliably when California experiences dry hydrologic years. We described several elements of reasonable alternatives above. These are the alternatives that should have been presented for the Bureau's Draft EA/FONSI on the 2010-2011 Water Transfer Program to comply with NEPA. 42 U.S.C. § 4332(2)(E).

Response:
As indicated above in Response to Comment 2-93, the two water transfer options addressed in the EA along with the No Action Alternative provide a reasonable range of alternatives for consideration. See also Responses to Comments 2-36 and 2-37 relative to the specific alternatives suggested by the commentor.

2-95

Comment:

The discussion and analysis of environmental impacts contained in the EA is cursory and falls short of NEPA‘s requirements and stems from having an unclear and poorly described narrative for the proposed 2010-2011 Water Transfer Program. It obscures realistic chains of cause and effect, which in turn prevent accurate and comprehensive accounting of environmental baselines and measurement of the DWB‘s potential impacts. NEPA‘s implementing regulations require that an EA “provide sufficient evidence and analysis for determining whether to prepare an [EIS].” 40 C.F.R. §1508.9(a). For the reasons discussed above, the EA fails to discuss and analyze the environmental effects of the water transfers, crop idling, and groundwater substitution proposed by the 2010-2011 Water Transfer Program. The Bureau must consider and address the myriad of environmental consequences that are likely to flow from this proposed agency action.

Along with our significant concerns about the adequacy of the proposed monitoring, the Draft EA/FONSI also fails to explain what standards will be used to evaluate the monitoring data, and on what basis a decision to modify or terminate the pumping would be made. In light of the document‘s silence on these crucial issues, the Draft EA/FONSI‘s conclusion that there will not be significant adverse impacts withers quickly under scrutiny.

Response:

Chapter 3 of the Draft EA provides thorough analysis of environmental impacts to resources in the Proposed Action area from both groundwater substitution and crop idling transfers. See response to comment 2-49 regarding proposed monitoring.

2-96

Comment:

The Ninth Circuit Court makes clear that NEPA mandates “a useful analysis of the cumulative impacts of past, present and future projects.” Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 810 (9th Cir. 1999). Indeed, “[d]etail is required in describing the cumulative effects of a proposed action with other proposed actions.” Id. The very cursory cumulative effects discussion contained in the EA plainly fails to meet this standard.

As discussed in Part I.C. above, the proposed DWB does not exist in a vacuum, and is in addition to a broader program to develop regional groundwater resources and a conjunctive use system. The 2010-2011 Water Transfer Program is also only one of several proposed and existing projects that affect the regional aquifers. The existence of these numerous related projects makes an adequate analysis of cumulative impacts especially important.

Response:
See the response to comment 2-89. This EA analyzed the two year 2010-2011 Water Transfer Program's interaction with programs/projects whose implementation was reasonably foreseeable during the Proposed Action's two year period of implementation.

2-97
Comments:
In addition to the improper segmentation evident in the Draft EA/FONSI, the assessment of environmental impacts is further deficient because the Bureau has failed to consider the cumulative impacts of the proposed groundwater extraction when taken in conjunction with other projects proposed for the development of groundwater and surface water.

The Bureau and its contractors are party to numerous current and reasonably foreseeable water programs that are related to the water transfers contemplated in the DWB including the following:

- Sacramento Valley Integrated Regional Water Management Plan (2006)
- Sacramento Valley Regional Water Management Plan (January 2006)
- Stony Creek Fan Conjunctive Water Management Program
- Sacramento Valley Water Management Agreement (Phase 8, October 2001)
- Draft Initial Study for 2008-2009 Glenn-Colusa Irrigation District Landowner Groundwater Well Program
- Regional Integration of the Lower Tuscan Groundwater Formation into the Sacramento Valley Surface Water System Through Conjunctive Water Management (June 2005)
- Stony Creek Fan Aquifer Performance Testing Plan for 2008-09
- Lower Tuscan Integrated Planning Program, a program funded by the Bureau that will integrate the Lower Tuscan formation aquifer system into the management of regional water supplies.
- Annual forbearance agreements (2008 had an estimated 160,000 acre feet proposed).

Response:
See response to comment 2-89. This EA analyzed the two year 2010-2011 Water Transfer Program's interaction with programs/projects whose

implementation was reasonably foreseeable during the Proposed Action's two year period of implementation. Residual impacts would not occur after the Proposed Action is implemented and would not affect implementation of other related, cumulative programs.

2-98

Comment:
The 2010-2011 Water Transfer Program is likely to serve as precedent for future actions with significant environmental effects.

As set forth above, this Project is part of a broader effort by the Bureau and DWR to develop groundwater resources and to integrate GCID's water into the state system. For these reasons, the 2010-2011 Water Transfer Program is likely to "establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration" (40 C.F.R. §1508.27(b)(6)), and should be analyzed in an EIS.

Response:
The 2010-2011 Water Transfer Program is a standalone action that proposes to approve and facilitate CVP transfers in 2010 and 2011. The Proposed Action is temporary and will cease after the 2011 transfer season. Reclamation does not intend this document to set precedent for future programs as it is a temporary action and other Reclamation-sanctioned water transfers have been approved and implemented in the past. The EA analyzes the Proposed Action in that manner. Developing groundwater resources of integrating GCID water into the state system is not a purpose of the Proposed Action. Chapter 1 identifies the purpose and need of the Proposed Action.

2-99

Comment:
Flooded rice fields, irrigation canals, and wetlands in the Sacramento Valley can be used by the giant garter snake for foraging, cover and dispersal purposes. The Draft EA fails to comprehensively analyze the movements and habitat requirements for the federal and state-threatened giant garter snake and yet again defers responsibility to a future time. The 2009 Biological Assessment acknowledged the failure of Bureau and DWR to complete the Conservation Strategy that was a requirement of the 2004 Biological Opinion. (BA at p. 19-20) [The BA appears to have no page numbers] What possible excuse delayed this essential planning effort?

Response:
Section 3.8 of the Draft EA analyzes habitat requirements of the GGS. The Proposed Action incorporates Environmental Commitments to reduce or avoid impacts and EA concludes that the Proposed Action will not result in significant effects on GGS populations. Reclamation is formally consulting with USFWS

on the 2010-2011 Water Transfer Program. The 2009 Drought Water Bank Biological Assessment is not related the public review for this EA.

2-100

Comment:

The 2010-2011 Water Transfer Program also proposes to delete or modify other mitigation measures previously adopted as a result of the EWA EIR process to substantially reduce significant impacts, but without showing they are infeasible. For example, the Bureau and DWR propose to delete the 160 acre maximum for "idled block sizes" for rice fields left fallow rather than flooded and to substitute for it a 320 acre maximum. (See 2003 Draft EWA EIS/EIR, p. 10-55; 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 4.) There is no evidence to support this change. In light of the agencies failure to complete the required Conservation Strategy mentioned above and the data gathered in the Colusa County study, how can the EA suggest that doubling the fallowing acreage is in any way biologically defensible?

Response:

The EA uses some of the information developed as part of the EWA, but does not tier to the EWA EIS/EIR. The EWA expired on December 31, 2007. The 2010-2011 Water Transfer Program is a separate action. The Environmental Commitments incorporated in the EA/FONSI are sufficient to avoid or minimize most of the potential effects of the Proposed Action.

2-101

Comment:

The agencies additionally propose to delete the mitigation measure excluding Yolo County east of Highway 113 from the areas where rice fields may be left fallow rather than flooded, except in three specific areas. (See 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 2.) What is the explanation for this change? What are the impacts from this change?

Deleting these mitigation measures required by the EWA approval would violate NEPA and CEQA's requirements that govern whether, when, and how agencies may eliminate mitigation measures previously adopted under NEPA and CEQA. (See *Napa Citizens for Honest Government v. Napa County Board.*

Response:

This revision was made in coordination with the USFWS, DWR, Department of Fish and Game and other biologists. Reclamation is formally consulting with USFWS on the 2010-2011 Water Transfer Program. USFWS will release a Biological Opinion that identifies appropriate conservation measures based on currently available data.

2-102

Comment:

The 2010-2011 Water Transfer Program fails to include sufficient safeguards to protect the giant garter snake and its habitat. The EA concludes, "The frequency and magnitude of rice land idling would likely increase through implementation of water transfer programs in the future. Increased rice idling transfers could result in chronic adverse effects to giant garter snake and their habitats and may result in long-term degradation to snake populations in the lower Sacramento Valley. In order to avoid potentially significant adverse impacts for the snake, additional surveys should be conducted prior to any alteration in water regime or landscape," (p. 3-110). To address this significant impact the Bureau proposes relying on the 2009 DWB Biological Opinion, which was a one-year BO. The expired BO highlights the Bureau and DWR's avoidance of meeting federal and state laws stating, "This office has consulted with Reclamation, both informally and formally, approximately one-half dozen times over the past 8 years on various forbearance agreements and proposed water transfers for which water is made available for delivery south of the delta by fallowing rice (and other crops) or substituting other crops for rice in the Sacramento Valley. Although transfers of this nature were anticipated in our biological opinion on the environmental Water Account, that program expired in 2007 and, to our knowledge, no water was ever made available to EWA from rice fallowing or rice substitution. The need to consult with such frequency on transfers involving water made available from rice fallowing or rice substitution suggests to us a need for programmatic environmental compliance documents, including a programmatic biological opinion that addresses the additive effects on giant garter snakes of repeated fallowing over time, and the long-term effects of potentially large fluctuations and reductions in the amount and distribution of rice habitat upon which giant garter snakes in the Sacramento Valley depend," (p.1-2). The Coalition agrees with the U.S. Fish and Wildlife Service that programmatic environmental compliance is needed under the Endangered Species Act, NEPA, CEQA, and the California Endangered Species Act.

Response:

Reclamation is formally consulting with USFWS on the 2010-2011 Water Transfer Program. USFWS will release a Biological Opinion that identifies appropriate conservation measures based on currently available data. The finding in the Final EA will reflect the Biological Opinion's conclusions. The proposed Baseline Monitoring and Research studies for giant garter snake will aid in better determining long-term effects to habitat and population sizes.

2-103

Comment:

It is conspicuously noticeable that there isn't a claim of a less-than-significant impact for the Giant Garter Snake (*Thamnophis gigas*), in the EA/FONSI. There is really no conclusion reached due to the fundamental absence of science for the species. The Bureau should also prepare an EIS because the 2010-2011

Water Transfer Program will likely have significant environmental effects on the Giant Garter Snake, a listed threatened species under the federal Endangered Species Act and California Endangered Species Act. 40 C.F.R. §1508.27(b)(9).

Response:
The findings with regard to GGS are included on pages 3-61 and 3-62 of the Draft EA. The last sentence of the second paragraph on page 3-62 includes the formal finding that " . . ., the Program would not likely adversely affect GGS." The available information supports this finding.

2-104

Comment:
The Purpose and Need Section of the EA/FONSI fails to specify the policy framework upon which the 2010-2011 Water Transfer Program is based.

Avoiding the requirements of the California Environmental Quality Act (CEQA) for the 2010-2011 Water Transfer Program does not reflect the actual environmental effects of the proposal which are similar to the proposed 1994 Drought Water Banks and for which a final Program Environmental Impact Report was completed in November 1993. In 2000, the Governor's Advisory Drought Planning Panel report, *Critical Water Shortage Contingency Plan* promised a program EIR on a drought-response water transfer program, but was never undertaken. Twice in recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate. So, the 2009 DWB Notice of Exemption and complete avoidance of CEQA review for the 2010-2011 Water Transfer Program reflects an end-run around established water law through the use of water transfers, and is therefore vulnerable to legal challenge under the California Environmental Quality Act.

Response:
Additional information about the 2010-2011 Water Transfer Program has been added to Chapter 1 of the Final EA, which addresses policy framework.

2-105

Comment:
We question the merits of and need for the 2010-2011 Water Transfer Program itself. The existence of drought conditions at this point in time is highly questionable and reflects the state's abandonment of a sensible water policy framework given our state and national economic recession and tattered public budgets. Our organizations believe the agencies continue to go too far to help a few junior water right holders, and that at bottom the 2010-2011 Water Transfer Program is not needed. The Project intends to directly benefit the areas of California whose water supplies are the least reliable by operation of state water law. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful

uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency.

Response:
See response to comment 2-6.

2-106

Comment:
The EA/FONSI's statement of purpose and need on page 1-2 states specifically that, "The purpose of the Proposed Action is to help facilitate the transfer of water throughout the State from willing sellers of water upstream of the Delta, under contract with Reclamation, to buyers that are at risk of experiencing water shortages in 2010 and 2011." This paragraph and the section that it is in omit a coherent discussion of need. The purpose and need should also state that this transfer program would be subject to specific criteria and delineate priorities, but they are absent.

Response:
See response to comment 2-6.

2-107

Comment:
The EA/FONSI makes no attempt to place the 2010-2011 Water Transfer Program into the context of the 2005 California Water Plan that the state recently completed. It appears to us that this plan is largely on the shelf now, perhaps because of the state's dire fiscal problems. It does contain many good recommendations concerning increasing regional water self-sufficiency. However, our review of the 2005 California Water Plan reveals no mention of the 2000 Critical Water Shortage Reduction Marketing Program or any overarching drought response plan that the state could have planned for in 2005, but did not. We sadly conclude that the state of California has no meaningful adopted drought response policy, save for gubernatorial emergency declarations to suspend protective environmental regulations. This is not a sustainable water policy for California.

The purpose and need section of the EA/FONSI *and the 2009 Governor's drought emergency declaration* cry out for placing the 2010-2011 Water Transfer Program into a policy framework. What is the state doing otherwise to facilitate regional water self-sufficiency for these areas with the least reliable water rights? How does the 2010-2011 Water Transfer Program fit into the state and federal government's water and drought policy framework? Instead, the state and federal response to this third consecutive dry year falls back on simply the Drought Water Bank model that ran into environmental and water users opposition in 1991 and 1992. Is anybody home at our water agencies?

Response:
The 2010-2011 Water Transfer Program has been developed to approve and facilitate water transfers between willing buyers and sellers. The Draft EA evaluates effects of the transfer of water subject to Reclamation contract. Agencies/sellers that do not wish to participate in transfers are not required to and those that do participate in water transfers are assumed to be willing participants that have a need for the transfer. The Proposed Action is a temporary action intended to help meet short-term needs for 2010 and 2011. It is not a Drought Water Bank and it not being operated by Reclamation. Willing sellers and buyers are responsible for soliciting the transfers.

2-108

Comment:
The 2010-2011 Water Transfer Program is not needed because the state's current allocation system in which the federal Bureau of Reclamation participates wastes water profligately.

Response:
See response to comment 2-6.

2-109

Comment:
We question the Bureau and DWR's contention of continued dry conditions, since the current storms have greatly increased reservoir levels throughout California. Non-state and non-federal reservoirs indicate conditions fast approaching normal for their facilities: Bullard's Bar in Yuba County is at 99 percent of the 15-year average for this time of year, EBMUD's Pardee Lake is at 97 percent of normal, San Francisco's Hetch Hetchy Reservoir on the Tuolumne River is at 152 percent of normal, while Don Pedro Reservoir on the same river is at 106 percent. The CVP's Millerton and Folsom reservoirs are below average for this time of year, but with the strong storms California is now getting through this week and into next, their storage figures are likely to improve dramatically when snowpack melts. These two reservoirs must provide water to the agricultural San Joaquin River Exchange Contractors first, and they have among the most senior rights on that river. Rice growers in the Sacramento Valley are generally expecting close to full deliveries from the CVP and their Yuba River water supplies. The CVP's own New Melones Reservoir on the Stanislaus River, which contributes to Delta water quality as well as to meeting eastern San Joaquin Valley irrigation demands, is at 87 percent of normal for this time of year.

Moreover, the SWP's terminal reservoirs at Pyramid (104 percent of average) and Castaic (99 percent of average) Lakes are right at about normal storage levels for this time of year, presumably because DWR has been releasing water from Oroville for delivery to these reservoirs.

The fact that reservoirs of the CVP with more senior responsibilities in the water rights hierarchy do well with storage for this time of year suggests that at worst this will be a year of below normal runoff in 2010 hardly a drought scenario. Low storage levels at Oroville, Shasta and San Luis may easily be attributed to redirected releases to terminal reservoirs or groundwater banks in the San Joaquin Valley and Tulare Lake Basin these latter storage venues and their current performance are not disclosed on DWR‘s Daily Reservoir Storage levels web site. Still, given what is known, from what these reservoir levels indicate many major cities and most Central Valley farmers are very likely to have enough water for this year.

Response:
See response to comment 2-6.

2-110

Comment:
The ones expecting to receive little water this year do so because of the low priority of their water service contracts within the Central Valley Project—their imported surface supplies are therefore less reliable in dry times. It is the normal and appropriate functioning of California’s system of water rights law that makes it so. Among those with more junior water contractor allocations, the Metropolitan Water District and the Santa Clara Valley Water District are the wealthiest regions and the agencies most capable of undertaking aggressive regional water self-sufficiency actions. They should be further encouraged and assisted to do so through coherently formulated state and federal water policies and programs.

Response:
The 2010-2011 Water Transfer Program is a short-term action to help agencies meet the immediate needs of their customers. It is not intended to meet the long-term needs of water agencies. Reclamation is approving and facilitating transfers and is not involved in soliciting buyers or sellers for transfers.

2-111

Comment:
On the agricultural side, the Bureau and DWR‘s efforts appear to benefit mainly the few western San Joaquin Valley farmers whose contractual surface water rights have always been less reliable than most and whose lands are the most problematic for irrigation. In excess of 1 million acres of irrigated land in the San Joaquin Valley and the Tulare Lake Basin are contaminated with salts and trace metals like selenium, boron, arsenic, and mercury. These lands should be retired from irrigation to stop wasteful use of precious fresh water resources. This water drains back after leaching from these soils the salts and trace metals into sloughs and wetlands and the San Joaquin River carrying along these pollutants. Retirement of these lands from irrigation usage would help stem

further bioaccumulation of these toxins that have settled in the sediments of these water bodies.

Response:
Buyers are responsible for determining the use of transfer water. The transfer water purchased by buyers must be used within the framework of beneficial uses of water. It is expected that water would go to permanent crops first and prime farmlands, and the marginal land would be receive water later. Addressing drainage related issues in the San Joaquin Valley, including land retirement options, are not within the scope of the Draft EA. Reclamation is working to address drainage-impaired lands under the authority of Public Law 86-488, 74 Statute 156, June 3, 1960, as amended by section 101(e) of the Act of October 18, 1986, Public Law 99-500. Reclamation is proceeding with the implementation of the ROD to provide drainage service under this authority.

2-112

Comment:
The 2010-2011 Water Transfer Program would exacerbate pumping of fresh water from the Delta, which has already suffered from excessive pumping in earlier years of this decade. Pumped exports cause reverse flows to occur in Old and Middle Rivers and can result in entrainment of fish and other organisms in the pumps. Pumping can shrink the habitat for Delta smelt as well, since less water flows out past Chipps Island through Suisun Bay where Delta smelt often prefers. Our organizations share the widely held view that operation of the Delta export pumps is the major factor causing the Pelagic Organism Decline (POD) and in the deteriorating populations of fall-run Chinook salmon. The State Water Resources Control Board received word in early December that the Fall Midwater Trawl surveys for September and October showed the lowest abundance indices for Delta smelt, American shad, and striped bass in history. The index for longfin smelt is the third lowest in history. 2009 was the second consecutive year where no commercial fishing of fall-run Chinook fish will be allowed because of this species population decline. While it is too early to know, 2010 could be the third straight year where no commercial fishing will be allowed, which would be unprecedented. Operation of the DWB at a time when others refrain from taking these fish and other organisms strikes us as a consummate unwillingness on the part of the State of California and the U.S. Bureau of Reclamation to share in the sacrifices needed to help aquatic ecosystems and anadromous fisheries of the Bay-Delta Estuary recover.

Response:
The proposed transfers under the Proposed Action would be implemented in accordance with all current regulatory restrictions governing Project operations including the Biological, which analyzed up to 600,000 acre-feet of water transfers from all programs, and restricts conveyance of transfer water through the Delta to July through September. The Proposed Action would not result in any operational changes in the Delta.

2-113

Comment:

New capital facilities should be avoided to save on costly, unreliable, and destructive water supplies that new dams and canals represent. Moreover, these facilities would need new water rights; yet the most reliable rights in California are always the ones that already exist and of those, they are the ones that predate the California State Water Project and the federal Central Valley Project. We should apply our current rights far more efficiently and realistically than we do now. California should instead pursue a no-regrets policy incorporating aggressive water conservation strategies, careful accounting of water use, research and technological innovation, and pro-active investments.[5]

Response:

Comment noted.

2-114

Comment:

The Bureau's EA/FONSI states on page 3-16:

> *California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include: (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.*

We unreservedly state to you that the Draft EA/FONSI on the proposed 2010-2011 Water Transfer Program appears to describe a project that would fail all three of these tests as currently described. The 2010-2011 Water Transfer Program clearly has the potential to affect the human and natural environments, both within the Sacramento Valley as well as in the areas of conveyance and delivery. It is entirely likely that injuries to other legal users of water, including those entirely dependent on groundwater in the Sacramento Valley, will occur if this project is approved. Groundwater, fishery and wildlife resources are likely also to suffer harm as instream users of water in the Sacramento Valley. And the economic effects of the proposed DWB are at best poorly understood through the EA/FONSI. To its credit, at least the Bureau studied the proposed project, while DWR has completely avoided CEQA, thereby enabling the agency to ignore these potential impacts.

Taken together, the Bureau and DWR treat these serious issues carelessly in the EA/FONSI, and in DWR's specious avoidance of CEQA review. In so doing, they deprive decision makers and the public of their ability to evaluate the potential environmental effects of this Project, and violate the full-disclosure purposes and methods of both the National Environmental Policy Act and the California Environmental Quality Act.

Response:
The referenced text is included in the affected environment section of the EA and not intended to be an analysis; however, the EA does analyze impacts to other users of water, biological resources, and the economy. Section 3.1 (Surface Water Resources) analyzes effects to other legal users of water. Sections 3.6, 3.7, and 3.8 analyze effects to biological resources. Section 3.12 (Socioeconomics) analyzes effects to the overall economy in the counties from which the water is transferred.

2-115

Comment:
None of the signatory organizations to this letter received notice from the Bureau that this EA/FONSI had been released on January 5, 2010. With the Coalition's 2009 DWB comments on the EA/FONSI, we had the following request: *Our organizations request advance notification of any meetings that address this proposed Project or any other BOR projects in Butte, Colusa, Glenn, or Tehama counties that require consideration of NEPA/CEQA as well as water rights applications that will be needed as the 2010-2011 Water Transfer Program moves forward. Please add C-WIN, CSPA, BEC, and the Center for Biological Diversity to your basic public notice list on this Project, and send us each any additional documents that pertain to this particular Project.* While we do find record of a news release about the EA/FONSI on the Bureau's Mid-Pacific Region web site, we believe the Bureau has not met its obligations under NEPA for providing adequate public outreach to solicit review and comment of its environmental review documents in this matter. We learned of the Water Transfer Program on January 14th more than halfway through the review period set by the Bureau. Bureau staff rejected our request for additional time to review the documents, much to our disappointment. Please add our names and email addresses to all future environmental review news releases.

Response:
Reclamation is not required by NEPA to release an EA for public review; however, for the 2010-2011 Water Transfer Program EA, Reclamation did, in fact, voluntarily provide the Draft EA for public review and comment. Public notice of the availability of the Draft EA for review and comment was provided on Reclamation's local website, as acknowledged by the commentor. While also not required, Reclamation voluntarily prepared written responses to all comments received on the Draft EA, including, but not limited to, the comments submitted by the Coalition. Reclamation carefully considered the commentor's earlier request for additional time to review the document and, in light of the facts above, determined that extending the review was not necessary or appropriate.

3 – Butte Environmental Council

3-1

Comment:
Butte Environmental Council (BEC) believes the 2010/2011 Water Transfer proposal (further referred to as Projects) and environmental documentation are significantly flawed threatening the health and viability of the northern Sacramento Valley. The very premise of the proposed water transfers oppose the mission statements of the Department of Interior, Bureau of Reclamation and the California Department of Water Resources by placing the greed of a few water suppliers before the needs and protection of the California public and the ecosystems that desperately require our attention. While water transfers are a necessary element of water management in a time of drought, this proposal is so flawed it is difficult even to begin to identify areas of concern.

Response:
See responses to comments below to address specific issues identified in the comment letter.

3-2

Comment:
Preponderance of poorly written and organized documentation

Those wishing to comment must review the following draft documentation:

- *2010-2011 Water Transfer Program Draft.* U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, January 2010. (Further referenced as BOR 2010.)

- *Draft Technical Information for Water Transfers in 2010*. Water Transfers Office, California Department of Water Resources and Resource Management Division of Bureau of Reclamation, Mid-Pacific Region, November 2009. (Further referenced as DWR 2009.)

- *Water Transfer Issues*, an online set of 16 issues each a couple pages in length. Found at the following address: http://www.water.ca.gov/drought/transfers/ – select the Water Transfer Issues link under the 2010 Water Transfer tab. (Further referenced as Issues 2010.)

- *2004/2008 Environmental Water Account EIS/EIR.* A compilation of 21 documents found on the BOR site: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=107. (Further referenced as EWA 2008.)

Response:
The document is organized according to NEPA regulations for an EA. According to Section 1508.9, NEPA requires brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the Proposed Action and alternatives, and a listing of agencies and persons consulted. The Draft EA and the Final EA include all the required sections.

3-3

Comment:
The environmental documentation that accompanies this proposal ignores the principles established to protect against injury to third parties outlined in the California Water Code Section 1810 and the CVPIA. These fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.

Response:
The principles described in the comment are addressed in the EA. Section 3.1 (Surface Water Resources) analyzes effects to other legal users of water. Sections 3.6, 3.7, and 3.8 analyze effects to biological resources. Section 3.12 (Socioeconomics) analyzes effects to the overall economy in the counties from which the water is transferred.

3-4

Comment:
The Projects must provide the appropriate reports that indicate independent scientific analysis that injury has not occurred from all previous water transfer projects. The analysis should show that these principles are upheld in all efforts to transport water out of the area of origin. It also must be recognized that 'new water' does not exist at the levels necessary to sustain the over committed supplies.

Response:
This EA is analyzing the effects of potential future transfers rather than past transfers. Some historic transfers did not include the same environmental commitments and mitigation, so using information from those years would not be indicative of what may result from future transfers. Transfers in 2009 did include similar provisions, and no injury was reported associated with these transfers.

3-5

Comment:
Environmental Assessment ignores legal rights of the environment and general public

It is not clear that the broader and most senior rights of the environment and all citizens of this state are foremost in this effort. Scientifically sound proof of no injury for senior rights holders for all in-basin users and uses must be provided before plans for a two-year program is approved. Proof includes an independent analysis of all data generated, reported, and collected for past water transfer programs. This EA outlines in detail the level of documentation required to participate in the Projects, but fails to provide adequate documentation that this data has ever been analyzed. There has been sufficient time and in fact there is so much data (DWR, NASA, USGS, GAMA, and EWA) proving that significant impact has and will occur and that we are not appropriately tracking potential for overdraft.

Response:
The Proposed Action proposes that Reclamation would facilitate and approve water transfers in 2010 and 2011. Willing buyers and sellers would negotiate other terms of the transfer agreement. Transactions would occur over an open market and any district can be involved. There will be no effects to water rights. See response to comment 3-4 regarding analysis of past water transfer programs.

3-6

Comment:
Legal injury applies to all in-basin users including the environment; BOR and DWR efforts to protect said in-basin users should be tantamount to CVP/SWP contractors.

Response:
Reclamation will approve water transfers according to CVPIA and NEPA requirements. The EA does not address transfers of SWP water.

3-7

Comment:
Criteria surrounding groundwater substitution is flawed, Protection of water in tributaries of the Delta appears to be the only criteria present in the EA documentation. While it may be the Bureau's intention to protect the environment, the true intent appears to be protecting the junior rights of Project contractors.

Response:
The purpose of the EA is to analyze potential effects and identify mitigation measures, if necessary, to reduce effects. The groundwater substitution mitigation measures are included to reduce effects to surface water bodies, which reduces the potential for effects to a broad range of biological resources as well as water users, both Project and non-Project.

3-8

Comment:
The following highlighted statement negates the meaning of groundwater substitution of agricultural water because water is not needed when streams are at their peak during the wet season. This alternative must be removed as it refers to blatant selling of groundwater for use other that at the point of pumping.

> *Because groundwater levels generally recover at the expense of stream flow, the wells used in a transfer should* ***be sited and pumped in such a manner that the stream flow losses resulting from pumping peak during the wet season****, when losses to stream flow minimally affect other legal users of water. Sellers would not be paid for pumped water that would result in stream flow losses during the pumping season. Reclamation assumes that stream flow losses due to groundwater pumping for transfers are 12 percent of the amount pumped for transfer (see Section 3.2 for more information*).

Response:
This section has been clarified in the Final EA. Groundwater substitution pumping would only occur during the irrigation season. This section is referring to when the groundwater aquifer recharges, which includes a period after the pumping subsides.

3-9

Comment:
The 12% leakage from streams assumption is flawed because of the inherent hydrostratigraphic and geologic differences across the Sacramento Valley. Leakage is dependent on the local hydrogeologic conditions surrounding a pump and will vary well to well. Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage. DWR has documented that the Sacramento River's losing reach has migrated upstream from Grimes to Princeton.

Response:
Reclamation acknowledges that the assumption of 12 percent depletion factor from streams is a generalization. The amount of depletion will vary based on local stream and aquifer characteristics. This value was established by agencies and sellers during the 2009 Drought Water Bank and will be used during the 2010-2011 Water Transfer Program. Available local hydrologic models can be used to determine effects on stream flow. Reclamation must approve use of the model and results. Review of existing local model provided by the sellers will occur during the transfer review and approval process. The 12 percent depletion factor will be applied if existing models are not available or approved by Reclamation.

3-10

Comment:
The following references a very old report when in fact we have not had good recovery even during normal precipitation years.

> *Groundwater levels tend to decrease during the irrigation season and rebound in the wet winter months. A large portion of recharge in the basin is likely through percolation of natural runoff (DWR Northern District 2002). Because of the aquifer's relatively short recovery period and because the Proposed Action is only a two year program, transfers in 2010 and 2011 would likely have a minimal effect on long-term groundwater level trends. (BOR 2010)*

Response:
Groundwater levels throughout the Sacramento Valley undergo normal fluctuations. These fluctuations are both short-term and long-term. Short-term fluctuations can occur during the year as the volume of groundwater pumped for irrigation and supply vary with demand. Water levels also vary due to hydrologic conditions experienced in the Sacramento Valley and surrounding watersheds. In dry or drought conditions it is typical for water levels to drop from year to year. During wetter conditions, water levels typically rebound and can increase from one year to the next. Refer to response to comment 2-51.

3-11

Comment:
The Well Acceptance Criteria found in Table C-1 (DWR 2009) fails to mention Butte Creek as either a major or minor tributary of the Sacramento River affected by groundwater substitution. Butte Creek is the last tributary with wild-spawning Chinook salmon and their return numbers were dismal this past season.

Response:
DWR and Reclamation have agreed to call Butte Creek a major stream. Well Acceptance Criteria listed for a major stream will apply to Butte Creek.

3-12

Comment:
At the very least, Table C-1 should be accompanied with a map of proposed sellers with a GIS developed overlay establishing that criteria is met under all circumstances and impacts of proposed wells can be better assessed.

Response:
A map has been added in Section 3.2 of the Final EA.

3-13

Comment:
Figure 3.2-1 Sacramento Valley Groundwater Basin inadequately reflects the subbasins surrounding and north of Chico. All Chico residents are dependent on groundwater, in fact 86% of Butte County residents have no alternative water supply. There are between 5-10k disparate domestic wells in Butte County alone.

Response:
Figure 3.2-1 will be updated in the Final EA to reflect all groundwater subbasins in the Sacramento Valley as identified by DWR in Bulletin 118. Monitoring and mitigation plans and implementation will be required at the sellers cost. Reclamation will be responsible for ensuring monitoring and mitigation actions are implemented to ensure significant impacts are avoided. Site specific monitoring objectives and concerns, including the applicability of stream monitoring will be considered during the transfer review process.

3-14

Comment:
In a demonstration of good will toward the people and environment of the northern Sacramento Valley, we propose that the Bureau and DWR undertake the following actions in concert with the proposed Projects:

- Shorten the proposed Projects to a one-year drought response until appropriate environmental review is preformed and submitted to public for review
- Remove the groundwater substitution component from the proposed Projects
- Remove the provision that allows the Projects to operate in years that contractors receive less than 100 percent of their allocation

- Initiate independent research by academics and the USGS in the northern Sacramento Valley

- Award the Sacramento Valley co-equal value with the bay-delta, the San Joaquin Valley and the metropolitan regions of the state

- Conduct project specific environmental review for the proposed Projects under the California Environmental Quality Act and the National Environmental Protect Act

- Promote policies that reflect an effort at decreasing demand as opposed to increasing dependency on waters that must pass through the Delta

- Notify signatories of all documents governed by the provisions of CEQA and NEPA

Response:
The Proposed Action would have the same project description and potential effects in 2010 and 2011; therefore, it is covered in one document. Groundwater substitution is a primary component of the Proposed Action and cannot be removed because sellers have indicated their willingness to implement groundwater substitution actions. Environmental Commitments and minimization measures would reduce any potential impacts of the Proposed Action. The transfers would be negotiated between willing selling and buyers; Reclamation is not involved in soliciting transfers. Reclamation and DWR experts are working cooperatively with sellers and buyers to reduce potential effects. Transfers that could have potential effects and are not appropriately mitigated will not be approved or will be halted.

3-15

Comment:
BEC also requests that the FONSI comment period be extended to the full 30 days as allowed by federal law.

Response:
See response to comment 2-115.

4 – MBK Engineers

4-1

Comment:
It is our understanding that the quantities identified in Table 2-1, page 2-4 for Cranmore Farms, Pelger Mutual Water Company, and Pleasant Grove-Verona Mutual Water Company are limited during July through September based on criteria under CVPIA. Should the quantities in Table 2-1 reflect an upper limit

for these three potential sellers based on water that may be available for transfer during the entire period of May through September?

Response:
In the Final EA, Table 2-1 has been updated to include water that could be made available from May through September.

4-2

Comment:
Where applicable, entities that hold Sacramento River Settlement Contracts with Reclamation should be identified as such. For example, see Cranmore Farms description identifying "contract", page 3-2 of Draft EA.

Response:
Change made in the Final EA.

4-3

Comment:
On page 3-3, the first sentence of Pelger Mutual Water Company's description should identify: "Pelger MWC *diverts surface waterfront* the Sacramento River. .. "

Response:
Change made in the Final EA.

4-4

Comment:
On page 3-3, the second sentence of Pleasant Grove-Verona Mutual Water Company's description should be deleted. The third sentence should identify: "Shareholders divert surface water from the Sacramento River and the Natomas Cross Canal under their individual water rights and pursuant to the Settlement Contract with Reclamation."

Response:
Change made in the Final EA.

4-5

Comment:
On page 3-3, the last sentence of Meridian Farms Water Company's description should identify: "Meridian Farms WC diverts surface water from the Sacramento River pursuant to its water rights and its Settlement Contract with Reclamation."

Response:
Change made in the Final EA.

4-6

Comment:
On page 3-19, the first sentence of Pleasant Grove-Verona Mutual Water Company's description should identify: "Pleasant Grove-Verona MWC holds a Settlement Contract with Reclamation on behalf of its shareholders for diversions from the Sacramento River and the Natomas Cross Canal; and could transfer up to 9,637 acre feet through groundwater substitution and/or 4,000 acre feet through cropland idling/crop shifting."

Response:
Change made in the Final EA.

4-7

Comment:
Should Figure 3.2-2 on page 3-23 identify Groundwater Substitution Pumping?

Response:
Figure revised in the Final EA to remove “Groundwater Substitution Pumping”.

4-8

Comment:
In regard to Table 3.2-2 on page 3-26, it is our understanding that a delineated wetland is considered a minor surface water feature, as identified in the Environmental Water Account EIS/EIR.

Response:
Delineated wetlands should be considered minor surface water features. The Final EA has been revised to include an updated Table 3.2-2.

4-9

Comment:
Should Figure 3.9-1 on page 3-65 identify Cranmore Farms and Feather Water District? Also, the leader for Sacramento River Ranch should be adjusted to the correct location.

Response:
Figure edited. Feather Water District is not a potential seller and not included on the map.

4-10

Comment:
Should Table 3.15-1 on page 3-100 include Feather Water District?

Response:
Feather Water District has been removed from the Final EA because their contract does not include a provision for transfer of water.

4-11
Comment:
We continue to believe that the option for a forbearance type arrangement should be further evaluated and potentially available under the Program. In this way, water users would elect not to divert surface water and allow this water to be picked up under Reclamation's water rights. The same physical actions are occurring with or without forbearance; and therefore, we believe the Draft EA may cover a forbearance arrangement as well. We understand Reclamation staff believes it is no longer an option due to associated costs. We will await the material that Mr. Rust indicated would be provided by Reclamation to support its position.

Response:
A forbearance agreement would not change the way that water is made available for transfer, conveyed to buyers, or used by the buyers. Therefore, the effects of forbearance arrangements are addressed within this EA. Reclamation has determined that it will not consider these arrangements at this time, but they would have NEPA coverage if Reclamation reconsiders forbearance arrangements in the future.

5 – Smiland & Chester

5-1
Comment:
We write as counsel for the Bank of America, N.A., as successor to U.S. Trust Company, trustee of the Vecchioli Family Trust (the “Trust”), owner of approximately 1,309 acres of irrigated crop land and related interests (the “Property”) in the camp 12 area of Central California Irrigation District (“CCID”). Unless properly drained the Property is subject to severe salination and waterlogging. The temporary drainage measures now in place are expected to terminate in the near future. No agency with responsibility to provide drainage to the Property has yet provided an effective and permanent solution to this serious problem. Thus, the Trust believes that it must now look to the alternative of selling, leasing, or otherwise transferring its interests in water or water rights, as authorized by Section 3405(a) of the Central valley Improvement Act of 1992 (the “CVPIA”), in order to protect its investment and mitigate its losses.

Response:
Reclamation is working to address drainage-impaired lands under the authority of Public Law 86-488, 74 Statute 156, June 3, 1960, as amended by section

101(e) of the Act of October 18, 1986, Public Law 99-500. Reclamation is proceeding with the implementation of the ROD to provide drainage service under this authority. This EA addresses only short-term transfers; a long-term transfer of water or water rights is beyond the scope of this project.

5-2

Comment:
In our view, the Bureau is bound by the 1960 Act, as interpreted by the courts, and the 2000 injunction to provide drainage to Unit lands. Draining Unit lands, as required, would significantly benefit the Property. And providing drainage service to the Property, as authorized by Section 5 of the 1960 Act, would solve the Trust's problem. The Bureau's failure to comply to date with its drainage responsibly may be explained in part by the fact that the injunction remains unenforced.

Response:
See response to comment 5-1.

5-3

Comment:
Therefore, the provision of drainage to the Property by CCID is not only authorized but required. But, unfortunately, to date, CCID, like the Bureau, has not provided the permanent and effective drainage the Property requires.

Response:
See response to comment 5-1.

5-4

Comment:
Thus, we conclude that the Trust may transfer its interests in the reserved waters, and that the relevant agencies should encourage such transfer.

Response:
See response to comment 5-1.

5-5

Comment:
Thus, we conclude that the Trust's interests in substitute water may also be sold, leased, or otherwise transferred to other California water user for any beneficial purpose.

Response:
See response to comment 5-1.

5-6

Comment:
We have also reviewed the Bureau's Interim Guidelines For Implementation of the Water Transfer Provisions of the CVPIA, dated February 25, 1993 (the "Interim Guidelines"), as well as the Bureau's CVPIA Administrative Proposal on Water Transfers, dated April 16, 1998. Based on such reviews, we believe that the Trust could present to the Bureau for its review and approval a proposed water transfer. Indeed, the Trust intends to do just that.

Response:
See response to comment 5-1.

5-7

Comment:
We understand that it is the intent of that program that the Bureau will help make possible water transfers from willing sellers to buyers in the state that are experiencing water shortages in 2010 and 2011. We believe that our clients are potential participants in such program and may add substantially to its viability.

Response:
See response to comment 5-1.

6 – Oral comments

6-1

Comment:
Can Reclamation clarify the Environmental Commitment, "Water will not be purchased from a field fallowed during the two previous years (water may be purchased from the same parcel in successive years)"?

Response:
The following revisions have been made in the Final EA/FONSI: A field proposed for a crop idling transfer cannot be fallow more than two irrigation seasons in a row.

6-2

Comment:
Are air quality permits required for operating wells for groundwater substitution transfers in Glenn and Colusa counties?

Response:
Text has been added to Section 3.9.2.2 in the Final EA regarding permitting requirements in Glenn and Colusa counties. Any engines located in Glenn and Colusa counties would not need to be permitted.

Appendix E
Comment Letters Received on Public Draft EA

Veronese, Gina

Subject: FW: Reclamation Releases Draft EA/FONSI for 2010-2011 Water Transfer Program for Public Review and Comme

From: Erick Johnson [mailto:erickjohnson@wateragency.com]
Sent: Tuesday, January 05, 2010 2:57 PM
To: Jones, David G; Hubbard, Bradley C
Cc: Hauss, Brian
Subject: RE: Reclamation Releases Draft EA/FONSI for 2010-2011 Water Transfer Program for Public Review and Comme

Thanks for notice of the EA/FONSI.

On page 2-3 of the Draft EA it says:

"Transfer water will be conveyed during July through September only."

Am I missing something in other parts of the document or is that a limitation? 1-1

Thanks,

Erick Johnson

From: David Jones [mailto:djones@usbr.gov]
Sent: Tuesday, January 05, 2010 2:29 PM
To: erickjohnson@wateragency.com
Subject: Reclamation Releases Draft EA/FONSI for 2010-2011 Water Transfer Program for Public Review and Comme

Mid-Pacific Region
Sacramento, CA

MP-10-01

Media Contact: Pete Lucero, 916-978-5100, plucero@usbr.gov

For Release On: January 5, 2010

January 19, 2010

Mr. Brad Hubbard
United States Bureau of Reclamation
2800 Cottage Way, MP-410
Sacramento, CA 95825
bhubbard@usbr.gov

Dean Messer, Chief Water Transfers Office
Department of Water Resources
1416 9th Street
Sacramento, CA 95814
dmesser@water.ca.gov

Subject: Comments on the Draft Environmental Assessment and Findings of No Significant Impact for the *2010-2011 Water Transfer Program*

Dear Messrs. Hubbard and Messer:

AquAlliance, the California Sportfishing Protection Alliance, the Center for Biological Diversity, and the California Water Impact Network ("the Coalition") submit the following comments and questions for the Draft Environmental Assessment ("EA") and Findings of No Significant Impact ("FONSI"), for the *2010-2011 Water Transfer Program* ("Project"). We also provide comments about the purpose and need for the 2010-2011 state and federal water transfer programs that are mirror images of the 2009 Drought Water Bank.

The Bureau of Reclamation's draft environmental review of the Project does not comply with the requirements of National Environmental Policy Act ("NEPA"), 42 U.S.C. §4321 *et seq.* First, we believe that the Bureau needs to prepare an environmental impact statement ("EIS") on this proposal, as we believed for the 2009 Drought Water Bank ("DWB") that allowed up to 600,000 acre-feet (AF) of surface water transfers, up to 340,000 AF of groundwater substitution, and significant crop idling. The *2010-2011 Water Transfer Program* seeks approval for 200,000 AF of CVP related water and suggests that the EA covers non-CVP transfer water. Unfortunately, the non-CVP water appears late in the EA (section 3.18 Cumulative impacts), where the table identifies the non-CVP water (p. 3-107), but does not supply a sub-total. When added, non-CVP water equals 195,910 AF of additional water for transfers. The EA reveals that "the cumulative total amount potentially transferred from all sources would be up to 392,000 acre feet," (p. 3-

2-1

2-2

108) but the actual cumulative number is 395,910 AF of CVP and non-CVP water**.** The failure to supply sub-totals and the mathematical carelessness leaves the reader wondering what other liberties have been taken within the 2010-2011 Water Transfer Program.

Bureau reliance on the EA itself violates NEPA requirements because, among other things, the EA fails to provide a reasoned analysis and explanation to support the Bureau's proposed finding of no significant impact. The EA contains a fundamentally flawed alternatives analysis, and treatment of the chain of cause and effect extending from project implementation leading to inadequate analyses of nearly every resource, growth inducing impacts, and cumulative impacts. 2-3

An EIS would afford the Bureau, DWR, the State Water Resources Control Board, and the California public far clearer insight into how, where, and why the *2010-2011 Water Transfer Program* might or might not be needed. The draft EA/FONSI as released this month fails to provide adequate disclosure of these impacts. 2-4

Second, California Environmental Quality Act (CEQA) analysis of the 2010-2011 Water Transfer Program is completely absent at the programmatic level. Is the negligence in this regard due to the present litigation that challenges the 2009 Drought Water Bank exemption? The Project's actual environmental effects —which are similar to the 2009 Drought Water Bank, the Sacramento Valley Water Management Agreement, and the proposed 1994 Drought Water Bank (for which a final Program Environmental Impact Report was completed in November 1993) – are not presented in the EA, FONSI, or in any CEQA document. The Sacramento Valley Water Management Agreement was signed in 2002 and the need for a programmatic EIS/EIR was clear and initiated, but never completed. In 2000, the Governor's Advisory Drought Planning Panel report, *Critical Water Shortage Contingency Plan* promised a program EIR on a drought-response water transfer program, but was never undertaken. Twice in recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate. So, the Bureau's failure to conduct scientifically supported environmental review in an EIS and DWR's negligence to provide CEQA review reflects an end-run around established law through the use of water transfers, and is therefore vulnerable to legal challenge under the National Environmental Protection Act ("NEPA") and CEQA. 2-5

Finally, we also question the merits of and need for the Project itself. The existence of drought conditions at this point in time is highly questionable and reflects the state's abandonment of a sensible water policy framework. Our organizations believe the Bureau's EA/FONSI and the absence of DWR's programmatic review go too far to help a few junior water right holders at the expense of agriculture, communities, and the environment north of the Delta. The 2010-2011 Water Transfer Program will directly benefit the areas of California whose water supplies are the least reliable by operation of state water law. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency. 2-6

The proposed Project will have significant effects on the environment—both standing alone and when reviewed in conjunction with the multitude of other plans and programs (including the non-CVP water that is mentioned in the EA cumulative impacts section) that incorporate and are dependent on Sacramento Valley water. Ironically, the Bureau appears to recognize in its cumulative impacts discussion that there is potential for significant adverse impacts associated with the Project, but instead of conducting an EIS as required, attempts to assure the public that the 2010-2011 Water Transfer Program will be deferred to the "willing sellers" through individual "monitoring and mitigation programs" as well as through constraining actions taken by both DWR and Bureau professional staff whose criteria ought instead be incorporated into the Proposed Action Alternative (EA at p. 2-1, FONSI at p. 1-9). It is impossible to evaluate whether or not the mitigation and monitoring pans will be adequate to relieve the Bureau and DWR of responsibility for impacts from the Project (including the non-CVP water transfers). The language used in the EA (p.3-25) and the *Draft Technical Information for Water Transfers in 2010* (November 2009) (p. 26-31) fail to pass the blush test (details below).Of course, this is not a permissible approach under NEPA; significant adverse impacts should be mitigated—or avoided altogether as CEQA normally requires.[1] Moreover, in light of the wholly inadequate monitoring and mitigation planned for the 2010-2011 Water Transfer Program's extensive water transfer program, the suggestion that the public should be required to depend on the insufficient monitoring to provide the necessary advance notice of "significant adverse impacts" is an unacceptable position.

2-7

2-8

We incorporate by reference the following documents:

- Butte Environmental Council's comments on the Supplemental Environmental Water Account EIR/EIR, 2006.
- Butte Environmental Council's letter to DWR regarding the Drought Water Bank Addendum from Lippe Gaffney Wagner LLP, 2009.
- Butte Environmental Council's letter to DWR regarding the Drought Water Bank Addendum.
- Multi-Signatories letter regarding the Drought Water Bank, 2008.
- Professor Kyran Mish's White Paper, 2008.
- Professor Karin Hoover's Declaration, 2008.

2-9

[1] Perhaps even more telling, the Bureau actually began its own Programmatic EIS to facilitate water transfers from the Sacramento Valley and the interconnected actions that are integrally related to it, but never completed that EIS and now has impermissibly broken out this current segment of the overall Program for piecemeal review in the present draft EA. See 68 Federal Register 46218 (Aug 5, 2003) (promising a Programmatic EIS on these related activities, "include[ing] groundwater substitution in lieu of surface water supplies, conjunctive use of groundwater and surface water, refurbish existing groundwater extraction wells, install groundwater monitoring stations, install new groundwater extraction wells…" *Id.* At 46219. See also http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=788 (current Bureau website on "Short-term Sacramento Valley Water Management Program EIS/EIR").

2-10

I. The Bureau and DWR Must Prepare an Environmental Impact Statement/ Environmental Impact Report on the Proposed 2010-2011 Water Transfer Program

We strongly urge the Bureau to withdraw this inadequate environmental document and instead prepare a joint EIS/R on the 2010-2011 Water Transfer Program, before approval by the State Water Resources Control Board (SWRCB), in order to comply with both NEPA and CEQA requirements for full disclosure of human and natural environmental effects.

NEPA requires federal agencies to prepare a detailed environmental impact statement on all "major Federal actions significantly affecting the quality of the human environment . . . ." 42 U.S.C. §4332(2)(C). This requirement is to ensure that detailed information concerning potential environmental impacts is made available to agency decision makers and the public before the agency makes a decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). CEQA has similar requirements and criteria. 2-11

Under NEPA's procedures, an agency may prepare an EA in order to decide whether the environmental impacts of a proposed agency action are significant enough to warrant preparation of an EIS. 40 C.F.R. §1508.9. An EA must "provide sufficient evidence and analysis for determining whether to prepare an [EIS]" (*id.*), and must demonstrate that it has taken a "'hard look' at the potential environmental impact of a project." *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (internal quotation marks omitted). However, the U.S. Court of Appeals for the Ninth Circuit has cautioned that "[i]f an agency decides not to prepare an EIS, it must supply a convincing statement of reasons to explain why a project's impacts are insignificant." *Id.* (internal quotation marks omitted). The Bureau has not provided a convincing statement of reasons explaining why the DWB's impacts are not significant. So long as there are "substantial questions whether a project *may* have a significant effect on the environment," an EIS must be prepared. *Id.* (emphasis added and internal quotation marks omitted). Thus, "the threshold for requiring an EIS is quite low." *NRDC v. Duvall*, 777 F. Supp. 1533, 1538 (E.D. Cal. 1991). Put another way, as will be shown through our comments, the bar for sustaining an EA/FONSI under NEPA procedures is set quite high, and the Bureau fails to surmount it on the 2010-2011 Water Transfer Program. 2-12

NEPA regulations promulgated by the Council on Environmental Quality identify factors that the Bureau must consider in assessing whether a project may have significant environmental effects, including: 2-13

(1) "The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks." 40 C.F.R. §1508.27(b)(5).
(2) "The degree to which the effects on the quality of the human environment are likely to be highly controversial." *Id.* §1508.27(b)(4).
(3) "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to

anticipate on a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." *Id.* §1508.27(b)(7).

(4) "The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration." *Id.* §1508.27(b)(6).

(5) "The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973." *Id.* §1508.27(b)(9).

Here, the Bureau has failed to take a hard look at the environmental impacts of the Project. As detailed below, there are substantial questions about whether the 2010-2011 Water Transfer Program's proposed water transfers will have significant effects on the region's environmental and hydrological conditions especially groundwater, the interactions between groundwater and surface streams of interest in the Sacramento Valley region, and the species dependent on aquatic and terrestrial habitat. There are also substantial questions about whether the 2010-2011 Water Transfer Program will have significant adverse environmental impacts when considered in conjunction with the other related water projects that have occurred in the last decade and that are underway and proposed in the region. The Bureau simply cannot rely on the EA/FONSI for the foreseeable environmental impacts of the proposed 2010-2011 Water Transfer Program and still comply with NEPA's requirements.

A. The Proposed Action Alternative is poorly specified making it difficult to identify chains of cause and effect necessary to analyze adequately the alternative's environmental effects.

The Proposed Action Alternative is poorly specified and needs additional clarity before decision makers and the public can understand the human and environmental consequences of the 2010-2011 Water Transfer Program. The EA describes the Proposed Action Alternative as one reflecting the Bureau's intention to approve transfers of Central Valley Project water from willing sellers who contract with the Bureau ordinarily to use surface water on their croplands. Up to 200,000 AF of CVP water are offered from these sellers, according to Table 2-1 of the EA. In contrast to the EA/FONSI for the 2009 Drought Water Bank, the EA contains no "priority criteria" to determine water deliveries and simply acknowledges that water will be transfered to agricultural and urban interests (p. 3-88). The EA fails to indicate how much water has been requested by the buyers of CVP or non-CVP water, which is also in contrast to the EA/FONSI and DWR's addendum for the 2009 Drought Water Bank. This denial of information further obfuscates the need for the Project. 2-14

The EA/FONSI's statement of purpose and need (p. 1-1) states specifically that, "To help facilitate the transfer of water throughout the State, Reclamation and the Department of Water Resources (DWR) are considering whether they should approve and facilitate water transfers between willing sellers and buyers." This paragraph omits coherent discussion of need. Merely 2-15

stating that, "The transfer water would be conveyed, using CVP or SWP facilities, to water users that are at risk of experiencing water shortages in 2010 and 2011 due to drought conditions and that require supplemental water supplies to meet anticipated demands," lacks specificity and rigor. The purpose and need should also state that this transfer program would be subject to specific criteria for prioritizing transfers.

The EA's description of the proposed action alternative needs to make clear what would occur if sale criteria are in fact applied and if exceptions will be allowed, and if so, by what criteria would exceptions be made.. Do both Project agencies lack criteria to prioritize water transfers? What is the legal or policy basis to act without providing priority criteria? Without foundational criteria, the public is not provided with even a basic understanding of the need for the Project. 2-16

There is considerable ambiguity over just how many potential sellers there are and how much water they would make available. The EA states that, "Entities that are not listed in this table [2-1] may decide that they are interested in selling CVP water, but those transfers may require supplemental NEPA analysis to allow Reclamation to complete the evaluation of the transfers," (p. 2-3 and 2-4). Allowing a roving Project location is not permissible and avoids accurate analysis of all impacts including growth inducing and cumulative impacts. 2-17

Absent buyers' request numbers and the potential for the participation of unknown additional sellers signals that neither the Bureau nor DWR have a clear idea what the 2010-2011 Water Transfer Program is intended to be. This problem contributes greatly to and helps explain the poorly rendered treatment of causes and effects that permeate the Bureau's EA. The project agencies, decision-makers, and the public all face a moving target with the 2010-2011 Water Transfer Program. Such discrepancies reflect hasty consideration and poor planning by project proponents. Nor can the agencies reasonably attribute their inadequate environmental reviews on lack of warning. The Governor, Senator Dianne Feinstein, and congressional representatives from the San Joaquin Valley have all made fear of drought a centerpiece of their water statements in 2008 and 2009. Yet DWR and the Bureau apparently are not able to present a stable Project with clear needs and criteria. 2-18

From data available in the EA and the Addendum, it is not possible to determine with confidence just how much water is requested by potential urban and agricultural buyers. There is no attempt to describe how firmly tendered are offers of water to sell or requests to purchase. Guessing at the possible requests based on the 2009 DWB where there were between 400,000 and 500,000 AF of presumably urban buyer requests[2] alone (which had priority over agricultural purchases, according to the 2009 DWB priorities) and a cumulative total of less than 400 TAF from willing sellers, which is also true for the 2010-2011 Water Transfer Program (with just over half that coming from CVP water), it would appear that many buyers are not likely to have their needs 2-19

[2] Neither DWR's Addendum nor the Bureau's EA specify numerical requests for the cities of Huron, Avenal, Coalinga, and the Avenal State Prison making it impossible to have a firmer number for the amount of urban request for water. Our estimate assumes SCVWD's 30,000 AF and MWD's 300,000 AF requests are for entirely urban uses of DWB-purchased water.

addressed by the 2010-2011 Water Transfer Program. If so, the Bureau and DWR should state the likelihood that many requests will not be fulfilled in order to achieve a full and correct environmental compliance treatment of the proposed action. Such an estimate is necessary for accurate explication of the chains of cause and effect associated with the 2010-2011 Water Transfer Program—and which must propagate throughout a NEPA document for it to be adequate as an analysis of potential natural and human environmental effects of the proposed project. We have additional specific questions:

- What are the requests of the San Luis and Delta Mendota Water Authority (SLDMWA)? Is the request for an agricultural use or an urban use of Project water? If it is entirely for agricultural uses, how likely is it to be fulfilled under the non-stated Project priorities for water sales?
- What are the specific urban requests for water made by Avenal State Prison, and the cities of Avenal, Huron, and Coalinga, nested within the SLDMWA request?
- Will sale criteria be premised on full compliance with all applicable environmental and water rights laws? If so, how will cumulative impacts be analyzed under CEQA?

If priority criteria were revealed, how will intervening economic factors beyond the control of the Project be analyzed? Given the added uncertainty, an EIS should be prepared to provide the agencies with advance information and insight into what the sensitivity of the program's sellers and buyers are to the influences of prices—prices for water as well as crops such as rice, orchard and vineyard commodities, and other field crops. It is plausible that crop idling will occur more in field crops, while groundwater substitution would be more likely for orchard and vineyard crops. However, high prices for rice—the Sacramento Valley's largest field crop—would undermine this logic, and could lead to substantial groundwater substitution. These potential issues and impacts should be recognized as part of the 2010-2011 Water Transfer Program description and should directly apply to the Agriculture and Land Use, and Socioeconomic sections of the EA, because crop prices are key factors in choices potential water sellers would weigh in deciding whether to idle crops, substitute groundwater, or decline to participate in the DWB altogether. The EA is inadequate because it fails to identify and analyze the market context for crops as well as water that would ultimately influence the size and scope of the 2010-2011 Water Transfer Program. 2-20

Rice prices are high because of conditions for the grain in the world market. Drought elsewhere is a factor in reduced yields, but growing populations in south and east Asia demand more rice and the rice industry has struggled to meet that demand.[3]

This is very important. The Bureau tacitly admits that the Bureau—and by logical extension, DWR—has no idea how many sales of what type (public health, urban, agricultural) can be expected to occur. Put another way, there is a range of potential outcomes for the 2010-2011 2-21

[3] "Panic over rice prices hits California," *AZCentral.com*, April 24, 2008; UN News Service, "Bumper rice harvests could bring down prices but poor may not benefit, warns UN," 25 February 2009; "Era of cheap rice at an end in Taiwan: COA," *The China Post*, March 5, 2009; Jim Downing, "Sacramento Valley growers se rice prices soar," *Sacramento Bee*, 18 January 2009.

Water Transfer Program, and yet the Bureau has failed utterly to use the EA to examine a reasonable and representative range of alternatives as it concerns how the priority criteria would be established and affect Project transfers. And DWR has not bothered to conduct an appropriate level of review under CEQA...

Nor does the 2010-2011 Water Transfer Program prevent rice growers (or other farmers) from "double-dipping." It appears to us they could opt to turn back their surface supplies from the CVP and the State Water Project and substitute groundwater to cultivate their rice crop—thereby receiving premiums on both their CVP contract surface water as well as their rice crop this fall when it goes to market. There appear to be no caps on water sale prices to prevent windfall profits to sellers of Sacramento Valley water in the event that groundwater is substituted in producing crops—especially for crops where market prices are high, such as in rice. The DWB in the 1990s capped water prices at $125/acre-foot, much to the disappointment of some water sellers at that time. Why are the state and federal projects encouraging such potential windfall profits at a time when many others suffer through this recession? 2-22 2-23

As stated, neither the Bureau nor DWR state how much of these transfers would go to public health, urban or agricultural buyers. The EA must also (but fails to) address the ability and willingness of potential buyers to pay for Project water given the supplies that may be available. Historically, complaints from agricultural water districts were registered in the comments on the Draft EWA EIS/R and reported in the Final EIS/R in January 2004 indicating that they could not compete on price with urban areas buying water from the EWA. Given the DWB's priority criteria, will agricultural water buyers identified in Table 2-2 of the EA be able to buy water when competing with the likes of the Santa Clara Valley Water District and the Metropolitan Water District, representing two of the wealthiest regions of California? As a matter of statewide water, infrastructure, and economic policy, is it wise to foment urban versus agricultural sector competition for water based solely on price? Shouldn't other factors be considered in allocating water among our state's regions? This fails dramatically to encourage regions to develop their own water supplies more efficiently and cost-effectively without damage to resources of other regions. 2-24

Full disclosure of each offer of and each request for 2010-2011 Water Transfer Program water should be provided as part of the EA. This is necessary so the public can understand and have confidence in the efficacy of the Project's purpose and need, benefit from full disclosure of who requests what quantity of water and for what uses, and so that the public may easily verify chains of cause and effect. Urban application of transferred surface water is not examined in the EA/FONSI, as though how urban buyers would use their purchased water had no environmental effects. Since the dry period in California has lasted for over three years, how will purchased water be used and conserved? What growth inducing impacts will transferred water facilitate? 2-25

Nor is a hierarchy of priority uses among urban users for purchasing Project water presented. Could purchased water be used for any kind of landscaping, rather than clearly domestic purposes or strictly for drought-tolerant landscaping? We cannot tell from the EA/FONSI 2-26

narrative. How can the citizens of California be assured that water purchased through the 2010-2011 Water Transfer Program will not be used wastefully, in violation of the California Constitution, Article X, Section 2?

Will urban users need their Project purchased water only in July through September, or is that the delivery period preferred in the DWB because of ecological and fishery impact constraints on conveyance of purchased water? 2-27

Should agricultural water users be able to buy any Project water, how will DWR and the Bureau assure that transferred water for irrigation is used efficiently? Many questions are embedded within these concerns that DWR and the Bureau should address, especially when they approach the State Water Resources Control Board to justify consolidating their places of use in their respective water rights permits:

- How much can be expected to be purchased by agricultural water users, given the absence of any criteria, let alone priority criteria, in the 2010-2011 Water Transfer Program?
- How much can be expected to be consumptively used by agricultural water buyers?
- How much can be expected to result in tailwater and ag drainage?
- How much can be expected to add to the already high water table in the western San Joaquin Valley?
- What selenium and boron loads in Mud Slough and other tributaries to the San Joaquin River may be expected from application of this water to WSJ lands?
- What mitigation measures are needed to limit such impacts consistent with the public trust doctrine, Article X, Section 2 of the California Constitution, the Porter-Cologne Water Quality Control Act, and California Fish and Game Code Section 5937?

2-28

In other words, the most important chains of cause and effect—extending from the potential for groundwater resource impacts in the Sacramento Valley to potential for contaminated drainage water from farm lands in the western San Joaquin Valley where much of the agricultural buyers are located—are ignored in the Bureau's EA/FONSI and completely missing due to DWR's failure to comply with CEQA.

Will more of surface water transfers go to urban users than to ag users? The EA's silence on this is disturbing, and highlights the absence of priority criteria. What assurances will the Bureau and DWR provide that criteria exist or will be developed and how will these criteria be presented to the public and closely followed?

- The more that goes to urban water agencies the less environmental impacts there would be on drainage impaired lands of the San Joaquin Valley, a neutral to beneficial impact of the Project's operation on high groundwater and drainage to the SJR.
- However, the more Project water goes to agricultural users than to urban users, the higher would be groundwater levels, and more contaminated the groundwater would be in the western San Joaquin Valley and the more the San Joaquin River would be negatively affected from contaminated seepage and tailwater by operation of the Project.

2-29

The EA fails to provide a map indicating where the cumulative sources of the Project are located, and where the service areas are to which water would be transferred under the 2010-2011 Water Transfer Program. 2-30

Two issues concerning water rights are raised by this EA/FONSI:

- **Consolidated Place of Use.** Full disclosure of what the consolidated places of use for DWR and USBR would be, since the permit request to SWRCB will need NEPA coverage. Why is the flexibility claimed for the consolidated place of use necessary to this year's water transfer program? Couldn't the transfers be facilitated through transfer provisions of the Central Valley Project Improvement Act? Will the consolidation be a permanent or temporary request be limited to the duration of the governor‘s 2009 emergency declaration or of just the 2010-2011 Water Transfer Program? When is the 2010-2011 Water Transfer Program scheduled to sunset? How do the consolidated place of use permit amendments to the SWP and CVP permits relate to their joint point of diversion? Why doesn‘t simply having the joint point of diversion in place under D-1641 suffice for the purpose of the Project? 2-31
- **Description of the water rights of both sellers and buyers.** This would necessarily show that buyers clearly possess junior water rights as compared with those of willing sellers. Lack of full disclosure of these disparate rights is needed to help explain the actions and motivations of buyers and sellers in the 2010-2011 Water Transfer Program, otherwise the public and decision makers have insufficient information on which to support and make informed choices. 2-32
    - **Sacramento Valley water rights –** correlative groundwater rights, riparian rights and CVP settlement contract rights
    - **San Joaquin Valley water rights –** CVP contract rights only, junior-most contractors within the CVP priority system (especially Westlands Water District).
    - **Priority of allocations among water contractors within the CVP and SWP.**

To establish a proper legal context for these water rights, the Project Action Alternative section of the EA/FONSI should also describe more extensively the applicable California Water Code sections about the treatment of water rights involved in water transfers. 2-33

Thus, there are many avenues by which the 2010-2011 Water Transfer Program is a poorly specified program for NEPA and CEQA purposes, leaving assessment of its environmental effects at best murky, and at worst, risky to all involved, especially users of Sacramento Valley groundwater resources. 2-34

B. Correcting the EA’s poorly specified chains of cause and effect forces consideration of an expanded range of alternatives.

The Proposed Action Alternative need not have sophisticated forecasts of prices for rice and other commodities. Instead, for an adequate treatment of alternatives, the EA should have examined several reasonable scenarios beyond simply the 2010-2011 Water Transfer Program 2-35

and a "no action" alternative. Three reasonable permutations would have considered relative proportions of crop idling versus groundwater substitution (e.g., high/low, low/high, and equal proportions of crop idled water and groundwater substitution). Other reasonable drought response alternatives that can meet operational and physical concerns merit consideration and analysis by the Bureau includes:

- Planned permanent retirement of upslope lands in the western San Joaquin Valley where CVP-delivered irrigation water is applied to lands contaminated with high concentrations of selenium, boron and mercury, and which contribute to high water table and drainage problems for lowland farmers, wetlands and tributaries of the San Joaquin River. Retirement of these lands would permanently free up an estimated 3 million acre-feet of state and federal water during non-critical water years. Ending irrigation of these lands would also result in substantial human environmental benefits for the San Joaquin River, the Bay-Delta Estuary, and the Suisun Marsh from removal of selenium, boron, and salt contamination. Having such reasonable and pragmatic practices in place would go a long way to eliminate the need for drought water banks in the foreseeable future. 2-36
- More aggressive investment in agricultural and urban water conservation and demand management among CVP and SWP contractors even on good agricultural lands, including metering of all water supply hook-ups by all municipal contractors, statewide investment in low-flush toilets and other household and other buildings' plumbing fixtures, and increased capture and reuse of recycled water. Jobs created from such savings and investments would represent an economic stimulus that would have lasting job and community stability benefits as well as lasting benefits for water supply reliability and environmental stabilization. 2-37

C. The 2010-2011 Water Transfer Program EA fails to specify adequate environmental baselines, or existing conditions, against which impacts would be assessed and mitigation measures designed to reduce or avoid impacts. 2-38

The 2010-2011 Water Transfer Program environmental review by the Bureau incorporate by reference for specific facets of their review the 2003/2004 and 2007/2008 Environmental Water Account EIS/R documents. In both cases, these environmental reviews were conducted on a program whose essential purpose is to "provide protection to at-risk native fish species of the Bay-Delta estuary through environmental beneficial changes in State Water Project/Central Valley Project operations at no uncompensated water cost to the Projects' water users. This approach to fish protection involves changing Project operations to benefit fish and the acquisition of alternative sources of project water supply, called the 'EWA assets,' which the EWA agencies use to replace the regular Project water supply lost by pumping reductions." 2-39

The two basic sets of actions of the EWA were to:

- Implement fish actions that protect species of concern (e.g., reduction of export pumping at the CVP and SWP pumps in the Delta); and

- Increase water supply reliability by acquiring and managing assets to compensate for the effects of the fish actions (such as by purchasing water from willing sellers for instream flows that compensates the sellers for foregone consumptive use of water).

Without going into further detail on the EWA program, there is no attempt by the EWA agencies to characterize its environmental review as reflective of water transfer programs generally; the EWA was a specific set of strategies whose purpose was protection of fish species of concern in the Delta, not drought aid for junior water right-holding areas of California. One consequence of this attempt to rely on the EWA EIS/R is that it makes the public's ability to understand the environmental baseline of the 2010-2011 Water Transfer Program impossible, because environmental baselines, differing purpose and need for the project, and many relevant mitigation measures are not readily available to the public. Merely referring to the EWA documents (e.g.) p. 3-47) mocks NEPA and CEQA missions to inform the public adequately about the environmental setting and potential impacts of the proposed project's actions. Moreover, a Water Transfer Program for urban and agricultural sectors is plainly not the same thing as an Environmental Water Account. 2-40

Another consequence is that the chains of cause and effect of an EWA versus a 2010-2011 Water Transfer Program are entirely different because of their different purposes. While the presence of water purchases, willing sellers, and requesting buyers is similar, the timing of EWA water flows are geared to enhancing and protecting fish populations; the water was to flow in Delta channels to San Francisco Bay and the Pacific Ocean. In stark contrast, the DWB's water flows focus water releases from the SWP and CVP reservoirs to be exported for deliveries in the July through September period, whereas EWA assets would be "spent" year-round depending on the specific need to protect fish. EWA was about purchasing water to provide instream flows in the Delta, while the DWB is to acquire water to serve consumptive uses outside of the Delta. 2-41

Furthermore, to tease out the various ways in which the EWA review—itself a two-binder document consisting of well over 1,000 pages—could be used to provide appropriate environmental compliance for the DWB is not even attempted by DWR and the Bureau which at least has staff that could have been assigned to undertake it; yet they do not. It is therefore well beyond the reach of non-expert decision-makers and the public, and the use of the EWA EIS/R as the basic environmental review for the DWB therefore violates both NEPA and CEQA. 2-42

Nor is any attempt made in the EWA EIS/R to characterize the EWA as a "program level" environmental review off of which a Water Transfer Program-like project could perhaps legitimately tier. In our view, this reliance on the EWA EIS/R obscures the environmental baselines of the DWB from public view, inappropriately conflates the purposes of two distinct environmental reviews, and flagrantly violates NEPA and CEQA. This could only be redressed by preparation of an EIS/R on the 2010-2011 Water Transfer Program. 2-43

Finally, the most significant baseline condition omitted in the Bureau's inadequate and DWR's negligent reporting relates to Sacramento Valley groundwater resources, discussed in the next section.

D. Scientific uncertainties and controversy about Sacramento Valley groundwater resources merit consideration that only an EIS can provide.

There is substantial evidence that the 2010-2011 Water Transfer Program may have significant impacts on the aquifer system underlying the project and the adjacent region that overlies the Tuscan Formation. This alone warrants the preparation of an EIS.

Additionally, an EIS is necessary where "[a] project['s] … effects are 'highly uncertain or involve unique or unknown risks.'" *Blue Mountains Biodiversity Project*, 161 F.3d at 1213 (quoting 40 C.F.R. §1508.27(b)(5)). Here, the draft EA/FONSI fails to adequately address gaps in existing scientific research on the hydrology of the aquifer system and the extent to which these gaps affect the Bureau's ability—and by logical extension, DWR's ability—to assess accurately the Project's environmental impacts.

2-44

1. Existing research on groundwater conditions indicates that the 2010-2011 Water Transfer Program may have significant impacts on the aquifer system.

The EA fails to describe significant characteristics of the aquifers that the 2010-2011 Water Transfer Program proposes to exploit. These characteristics are relevant to an understanding of the potential environmental effects associated with the 2010-2011 Water Transfer Program's potential extraction of up to 154,237 AF of groundwater (p, 2-4 and 3-107). First, the draft EA/FONSI fails to describe a significant saline portion of the aquifer stratigraphy of the 2010-2011 Water Transfer Program area. According to Toccoy Dudley, former Groundwater Geologist with the Department of Water Resources and former director of the Butte County Water and Resources Department, saline groundwater aquifer systems of marine origin underlie the various freshwater strata in the northern counties of Butte, Colusa, Glenn, and Tehama ("northern counties"). The approximate contact between fresh and saline groundwater occurs at a depth ranging from 1500 to 3000 feet. (Dudley 2005) (A list of all references cited in these comments can be found at the end of this letter.)

2-45

Second, the EA fails to discuss the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the northern counties Project area. Dudley finds that the lower Tuscan aquifer located in the Butte Basin is under pressure. "It is interesting to note that groundwater elevations up gradient of the Butte Basin, in the lower Tuscan aquifer system, are higher than the ground surface elevations in the south-central portion of Butte Basin. This creates an artesian flow condition when wells in the central Butte Basin are drilled into the lower Tuscan aquifer." (Dudley 2005). The artesian pressure indicates recharge is occurring in the up-gradient portions of the aquifer located along the eastern margin of the Sacramento Valley.

2-46

Third, the EA fails to describe the direction of movement of water through the Lower Tuscan Formation that underlies the northern counties. According to Dudley: "From Tehama County south to the city of Chico, the groundwater flow direction in the lower Tuscan is westerly toward the Sacramento River. South of Chico, the groundwater flow changes to a southwesterly direction along the eastern margin of the valley and to a southerly direction in the central portion of the Butte Basin." (Dudley 2005) 2-47

Fourth, the draft EA fails to disclose that the majority of wells used in the Sacramento Valley are individual wells that pump from varying strata in the aquifers. The thousands of domestic wells in the target export area that are vulnerable to groundwater manipulation and lack historic monitoring. The Bureau's 2009 DWB EA elaborated on this point regarding Natomas Central MWC (p. 39) stating that, "Shallow domestic wells would be most susceptible to adverse effects. Fifty percent of the domestic wells are 150 feet deep or less. Increased groundwater pumping could cause localized declines of groundwater levels, or cones of depression, near pumping wells, possibly causing effects to wells within the cone of depression. As previously described, the well review data, mitigation and monitoring plans that will be required from sellers during the transfer approval process will reduce the potential for this effect." 2-48

As the latter statement makes clear (even though this information was excluded from the Project EA), the Bureau hopes that individual mitigation and monitoring plans created by the sellers will reduce the potential for impact, but there is no assurance in the EA that it will reduce it to a level of insignificance for the thousands of well owners in the Sacramento Valley. The Coalition questions the adequacy of individual mitigation and monitoring plans and suggests that an independent third party, such as USGS, oversee the mitigation and monitoring program and not the Bureau and DWR. After the fiasco in Butte County during the 1994 Drought Water Bank and with the flimsy, imprecise proposal for mitigation and monitoring in the 2010-2011 Water Transfer Program (see details below), the agencies lack credibility as oversight agencies. 2-49

Fifth, the draft EA fails to provide recharge data for the aquifers. Professor Karin Hoover, Assistant Professor of hydrology, hydrogeology, and surficial processes from CSU Chico, found in 2008 that, "Although regional measured groundwater levels are purported to 'recover' during the winter months (Technical Memorandum 3), data from Spangler (2002) indicate that recovery levels are somewhat less than levels of drawdown, suggesting that, in general, water levels are declining." According to Dudley, "Test results indicate that the 'age' of the groundwater samples ranges from less than 100 years to tens of thousands of years. In general, the more shallow wells in the Lower Tuscan Formation along the eastern margin of the valley have the 'youngest' water and the deeper wells in the western and southern portions of the valley have the 'oldest' water," adding that "the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas." (Dudley 2005). "This implies that there is currently no active recharge to the Lower Tuscan aquifer system (M.D. Sullivan, personal communication, 2004)," explains Dr. Hoover. "If this is the case, then water in the Lower Tuscan system may constitute fossil water 2-50

with no known modern recharge mechanism, and, once it is extracted, it is gone as a resource," (Hoover 2008).

All of these aquifer characteristics are important to a full understanding of the environmental impacts of the 2010-2011 Water Transfer Program because there are numerous indications that other aquifer strata associated with the Lower Tuscan Formation are being operated near the limit of overdraft and could be affected by the 2010-2011 Water Transfer Program (Butte County 2007). The Bureau has not considered this important historic information in the draft EA. According to Dudley, the Chico area has a "*long term average decline in the static groundwater level of about 0.35 feet-per-year*." (Dudley 2007) (emphasis added.) Declining aquifer levels are not limited to the Chico Municipal area. This trend of declining aquifer levels in Chico, Durham and the Cherokee Strip is illustrated in a map submitted with this comment letter (CH2M Hill 2006). 2-51

Declining groundwater elevations have been observed specifically in Butte County. A 2007 Butte Basin Groundwater Status Report describes the "historical trend" in the Esquon Ranch area as showing "seasonal fluctuation (spring to fall) in groundwater levels of about 10 to 15 feet during years of normal precipitation and less than 5 feet during years of drought." The report further notes: "Long-term comparison of spring-to-spring groundwater levels shows a decline of approximately 15 feet associated with the 1976-77 and 1986-94 droughts (Butte Basin Water Users Association, 2007). The 2008 report indicates that, "The spring 2008 groundwater level measurement was approximately three feet higher than the 2007 measurement, however it was still four feet lower than the average of the previous ten spring measurements. Fall groundwater levels are approximately nine feet lower than the averages of those measured during either of the previous drought periods on the hydrograph. At this time it appears that there may be a downward trend in groundwater levels in this well," (Butte Basin Water Users Association, 2008).Thus, "*it appears that there may be a downward trend in groundwater levels in this well*." *Id.* (emphasis added).

Groundwater elevations in the Pentz sub-area in Butte County also reveal significant historical declines. The historical trend for this sub-area "…shows that the average seasonal fluctuation (spring to fall) in groundwater levels averages about 3 to 10 feet during years of normal precipitation and approximately 3 to 5 feet during years of drought. Long-term comparison of spring-to-spring groundwater levels shows a decline in groundwater levels during the period of 1971-1981, perhaps associated with the 1976-77 drought. Since a groundwater elevation high of approximately 145 feet in 1985 the measured groundwater levels in this well have continued to decline. Recent groundwater level measurements indicate that the groundwater elevation in this well is approximately 15-25 feet lower than the historical high in 1985. *Id.* Water elevations at the Pentz sub-area well have been monitored since 1967. "Since 1985 spring groundwater levels in this well have been declining and the spring 2008 measurement remained ten feet below historical high levels and continues the downward trend on the hydrograph." *Id.* (Emphasis added.) Both the Pentz and Esquon Ranch areas are located east of U.S. 99, in the eastern portion of the Tuscan aquifer.

Further evidence of changing groundwater levels appear in the Vina sub-region of Butte County, where water elevations have been monitored since 1947 at well 23N/01W09E001M . The historical averages, including 2008 data, are; Spring=156 feet and Fall=150 feet (Butte County p. 37-38). Unfortunately, the groundwater level measurement at this well in 2008 was the lowest recorded since 1994 (Butte County p. 38). Rock Creek, which is also in the Vina sub-unit once held water all year and salmon fishing was robust prior to the 1930s (Hennigan 2010). Declining groundwater levels have caused the valley portion of Rock Creek to run completely dry each year and have also been noticed with Hennigan Farms' wells since the 1960s. For example, a 1968 well had to be lowered 40 feet in 1974, another well constructed in 1978 had to be lowered 20 feet in 2009, and an old 1940s flood pump was lowered in the early 1960s, lowered again in 1976 when it was converted to a pressure pump, and lowered again in 1997 (Hennigan 2010).

In light of this downward trend in regional groundwater levels, the Bureau's EA should closely analyze replenishment of the aquifers affected by the proposed 2010-2011 Water Transfer Program. The draft EA fails to provide any in-depth assessment of these issues. For example, the EA fails to discuss the best available estimates of where groundwater replenishment occurs. Lawrence Livermore National Laboratory analyzed the age of the groundwater in the northern counties to shed light on this process: "Utilizing the Tritium (H3) Helium-3 (He3) ratio, the age of each sample was estimated. Test results indicate that the "age" of the groundwater samples ranges from less than 100 years to tens of thousands of years,: (Dudley et al. 2005). As mentioned above, Dudley opines that the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas. (2005). 2-52

Are isotopic groundwater data available for other regions in the Sacramento Valley? If so, they would be crucial for all concerned to understand the potential impacts from the proposed 2010-2011 Water Transfer Program. For example, the EA states, "The WFA area that could be affected by the proposed action includes only the 'North Area' bounded on the north and east by the Sacramento County line, by the Sacramento River on the west, and by the American River on the south." EA at p. 34. If this is the area in Sacramento County that is identified as most vulnerable to groundwater impacts, yet two major rivers surround it, shouldn't the Bureau understand the hydrologic relationship between the groundwater basin and the rivers? If that understanding exists, where is it presented in the EA? It is well known that the Sacramento River is already a losing river south of Princeton. 2-53

The City of Sacramento proposes to transfer surface water into the state water market and substitute 3,000 AF of groundwater (EA p.2-4), but the *Sacramento County Water Agency Water Management Plan* indicates that intensive use of this groundwater basin has resulted in a general lowering of groundwater elevations that will require extensive conservation measures to remediate. The Sacramento County Water Agency has devised a plan to help lead the city to a sustainable groundwater use to avoid problems associated with unrestrained overuse. The most reliable strategy is to reduce demand. Integrating the City's water supply into the state water supply would obviously increase demand and make the SCWA goals impossible to achieve. 2-54

The Bureau should prepare an EIS that discloses the fallacies inherent in its policies and actions. The need for almost 400,000 AF of water south of the Delta springs from failed business planning. The Bureau and DWR must acknowledge this and further disclose that their agencies are willing to socialize the risks taken by corporate agribusiness and developers while facilitating private profit. Instead of asking northern California water districts and municipal water purveyors to place their own water at risk as well as the water of their neighboring communities and thousands of residential well owners, water quality, fisheries, recreation, stream flow, terrestrial habitat, and geologic stability, the Bureau and DWR must disclose all the uncertainty in the 2010-2011 Water Transfer Program and then evaluate the risks with scientific methodology. This has clearly not been done. 2-55

2. The 2010-2011 Water Transfer Program proposes to rely on inadequate monitoring and mitigation to avoid the acknowledged possibility of significant adverse environmental impacts.

The draft EA and the Draft Technical Information for Water Transfers in 2010 referenced in the EA (Bureau and DWR 2009) require "willing sellers" to prepare individual monitoring and mitigation plans and to conduct the monitoring with oversight provided by the Bureau and DWR (p. 3-24 and 3-25). This fails to provide the most basic framework for governmental authority to enforce the state's role as trustee of the public's water in California, let alone a comprehensive and coordinated structure, for a very significant program that could transfer up to 154,239 AF of water from the Sacramento Valley. (Recall that DWR believes it has environmental compliance coverage for up to 600,000 AF of water sales from the Sacramento Valley, including 340,000 AF in groundwater substitution alone under the Governor's 2009 emergency exemption) The draft EA further defers responsibility to "willing sellers" for compliance with local groundwater management plans and ordinances to determine when the effects of the proposed extraction become "adverse," (p. 3-25). "Each district will be required to confirm that the proposed groundwater pumping will be compatible with state and local regulations and groundwater management plans," (EA at p. 3-25). It is not acceptable that the draft EA and the Draft Technical Information for Water Transfers in 2010 merely provide monitoring direction to "willing sellers" without identifying rigorous standards for the risks at hand, specific actions, acceptable monitoring and reporting entities, or funding that will be necessary for this oversight. 2-56

The Coalition proposes instead that the Bureau and DWR require, at a minimum, that local governments select independent third-party monitors, who are funded by surcharges on Project transfers paid by the buyers, to oversee the monitoring that is proposed in lieu of Bureaus and DWR staff, and that peer reviewed methods for monitoring be required. If this is not done, the Project's proposed monitoring is insufficient and cannot justify the significant risk of adverse environmental impacts. 2-57

For example, the EA and the Draft Technical Information for Water Transfers in 2010 fail to identify standards that would be used to monitor the 2010-2011 Water Transfer Program's impacts. It fails to identify any specific monitoring protocols, locations (particularly in up-

gradient recharge portions of the groundwater basins), and why chosen locations should be deemed effective for monitoring the effects of the proposed groundwater extraction. It also fails to describe how the objectives in the Draft Technical Information for Water Transfers in 2010 will be met and by whom (EA at p.3-24 and 3-25). Moreover, it fails to provide a mitigation strategy for review and comment by the public, but defers this vital mitigation planning effort to future documents created by "willing sellers," (EA at p.3-24 and 3-25) despite the fact that the EA acknowledges the potential for significant impacts. For example: 2-58

- Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage (EA at p. 3-12).
- . *Groundwater substitution transfers would alter ground water levels and potentially affect natural and managed seasonal wetlands and riparian communities, upland habitats and wildlife species depending on these habitats.* As a part of groundwater substitution transfers, the willing sellers would use groundwater to irrigate crops and decrease use of surface water. Pumping additional groundwater would decrease groundwater levels in the vicinity of the sellers' pumps. Natural and managed seasonal wetlands and riparian communities often depend on surface water/groundwater interactions for part or all of their water supply. Under the Proposed Action, subsurface drawdown related to groundwater substitution transfers could result in hydrologic changes to nearby streams and marshes, potentially affecting these habitats. Reduced groundwater elevations could also affect trees that access groundwater as a source of water through taproots in addition to extensive horizontal roots that use soil moisture as a water source. Decreasing groundwater levels could reduce part of the water base for species within these habitats (EA at p. 3-53 and 3-54).

The reader is directed to the Draft Technical Information for Water Transfers in 2010 to discover the minimal objectives and required elements of the monitoring and mitigation component of the Project. "The seller must implement an effective mitigation program to verify and correct problems that could arise due to transfer-related groundwater pumping," but the reader and possibly the sellers are left wondering what exactly is an "effective mitigation plan" since there is no particular guidance to manage and analyze the very complex hydrologic relationships internal to groundwater and connected to surface waters. Certainly the public has no idea or ability to comment, which fails the full disclosure mandate in NEPA and CEQA. Located on pages 30 and 31 of the Draft Technical Information for Water Transfers in 2010 is a brief list of a "number of potential impacts [that] are sufficiently serious that they must be avoided or mitigated for a project to continue." 2-59

- Contribution to long-term conditions of overdraft;
- Dewatering or substantially reducing water levels in nonparticipating wells;
- Measurable contribution to land subsidence;
- • Degradation of groundwater quality that substantially impairs beneficial uses or violates water quality standards; and

- Affecting the hydrologic regime of wetlands and/or streams to the extent that ecological integrity is impaired.

The Draft Technical Information for Water Transfers in 2010 continues with suggestions to curtail pumping lower bowls, and pay higher energy costs to ease the impacts to third party wells owners (p. 30 and 31). While this bone thrown at mitigation is appreciated, the glaring omissions are notable. The Draft Technical Information for Water Transfers in 2010 completely fails to mention, even at a very general level, how individual well owners will determine and prove where the impacts to their wells are coming from, that water quality and health could become a significant impact for impacted wells and users and streams, and that there are no mitigation measures even mentioned for streams and wetlands. There also appears to be no consideration for species monitoring, just "practices" or "conservation measures" to "minimize impacts to terrestrial wildlife and waterfowl," (Draft Technical Information p. 16). And please disclose why the 2009 DWB Biological Opinion is a reference to guide "specific practices on page 17 of the Draft Technical Information for Water Transfers in 2010. 2-60

Another example of the inadequacy of the proposed monitoring is that the draft EA fails to include any coordinated, programmatic plan to monitor stream flow of creeks and rivers located in proximity to the "willing sellers" that will evacuate more water than used historically. The potential for immediate impacts would be very close to water sellers' wells, but the long term impacts could be more subtle and more geographically diverse. What precautions has the Bureau and DWR made for the cumulative impacts that come not only from this two-year Project, but in combination with the water sales from the last three years and those that are planned by the Bureau into the future (see list in g, iv below)? Bureau and DWR water transfers are not just one or two year transfers, but many serial actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA. 2-61

As discussed above, adequate monitoring is vital to limit the significant risks posed by the Project to the health of the region's groundwater, streams, and fisheries (more discussion below). One unfortunate example is the EA's focus on groundwater substitution impacts that reflect the priority for water accounting and payment accuracy as opposed to the impacts to the groundwater system and streams. "The implementation of groundwater substitution pumping can lower the groundwater table and may change the relative difference between the groundwater and surface water levels. This change has a direct impact on the volume that a seller receives credit for being transferred," (EA p.3-22 and 3-23). Moreover, to the extent this Project is conceived as a two-year drought or hardship program that will provide knowledge for future groundwater extraction and fallowing, its failure to include adequate monitoring protocols is even more disturbing and creates the risk of significant long-term and even irreversible impacts from the Project.

a. The Bureau's assertion that the Project may be modified or halted in the event of significant adverse impacts to hydrologic resources is an empty promise in light of the wholly inadequate monitoring provided for in the 2010-2011 Water Transfer Program. Knowing that the 2-62

Bureau and DWR knowingly violated the X2 standard in the Delta in February 2009 does little to instill confidence from the Coalition in non-specific program and mitigation criteria.

The EA repeatedly illustrates that there is potential for significant injury to other groundwater users, water quality, streams, flora and fauna, and the soil profile (p. 3-12, 3-23, 3-24, 3-53, 3-54). Chapter three contains numerous examples that illustrate the need for an EIS since there is insufficient, comprehensive planning for, let alone preparation to mitigate, adverse environmental impacts:

- *Acquisition of water via groundwater substitution or cropland idling would change the rate and timing of flows in the Sacramento River compared to the No Action Alternative.*
- *In Figure 3.2-2, groundwater substitution pumping results in a change in the groundwater/surface water interaction characteristics. In this case, the water pumped from a groundwater well may have two impacts that reduce the amount of surface water compared to pre-pumping conditions. These mechanisms are:*
    - *Induced leakage. The lowering of the groundwater table causes a condition where the groundwater table is lower than that the water level in the surface water. This conditions causes leakage out of the surface water.*
    - *Interception of groundwater. The placement of groundwater substitution pumping may intercept groundwater that may normally have discharged to the surface water (i.e., water that has already percolated into the ground may be pumped out prior the water reaching the surface water and being allowed to enter the "gaining" stream).* 2-63
- *The changes in groundwater flow patterns (e.g., direction, gradient) due to increased groundwater substitution pumping may result in changes in groundwater quality from the migration of reduced quality water.*
- *Groundwater substitution transfers would alter ground water levels and potentially affect natural and managed seasonal wetlands and riparian communities, upland habitats and wildlife species depending on these habitats.*
- *Rice land idling transfers would reduce habitat and forage for resident and migratory wildlife populations.*
- *Water transfers could change reservoir releases and river flows and potentially affect special status fish species and essential fish habitat.*
- *Water transfers could affect fisheries and aquatic ecosystems in water bodies, including Sacramento and American River systems, the Sacramento-San Joaquin Delta, San Luis Reservoir, and DWR and Metropolitan WD reservoirs in southern California.*
- *Increased groundwater pumping for groundwater substitution transfers would increase emissions of air pollutants.*

The Bureau thus recognizes the potential for significant decline in groundwater levels as a result of the proposed activity (EA at p. 3-23, 3-24, 3-53, 3-54). This acknowledgement alone is sufficient to require a full EIS. Moreover, as detailed below, the monitoring proposed by the 2010-2011 Water Transfer Program is so inadequate that there can be no guarantee that adverse

impacts will be discovered, or that they will be discovered in time to avoid significant environmental impacts.

Glenn County will have groundwater substitution if the Project moves forward. The County realizes that its management plan may not be sufficient for the challenges presented by this Project and the myriad others and cautions that "[s]ince the groundwater management plan is relatively new and not fully implemented, the enforcement and conflict resolution process has not been vigorously tested," (http://www.glenncountywater.org/management_plan.aspx). Moreover, the Glenn County Groundwater Management Plan does not have any provisions to monitor or protect the environment. The 2010-2011 Water Transfer Program EA fails to disclose the inadequacies of this and other local ordinances and plans. 2-64

b. Monitoring based on the Glenn County Groundwater Management Plan is inadequate. Since the Bureau omitted discussion of the Glenn County Groundwater Management Plan in the 2010-2011 Water Transfer Program, we refer to the language used in the 2008 Stony Creek Fan EA/FONSI that explained that the existing Glenn County groundwater management plan will ensure the testing project will have no significant adverse effects on groundwater levels: "This Finding of No Significant Impact (FONSI) is based upon the following: … Implementation of the Glenn County Groundwater Management Plan during the aquifer performance testing plan will ensure that the proposed action will not result in any significant adverse effect to existing groundwater levels." Stony Creek Fan EA/FONSI at p. 2.

But the Butte County Department of Water and Resource Conservation explains that local plans are simply not up to the task of managing a regional resource:

> *Glenn County does not have an export ordinance because it relies on Basin Management Objectives (BMO) to manage the groundwater resource, and subsequently to protect third parties from transfer related impacts. Recently, Butte County also adopted a BMO type of groundwater management ordinance. Butte County, Tehama County and several irrigation districts in each of the four counties have adopted AB3030 groundwater management plans. All of these groundwater management activities were initiated prior to recognizing that a regional aquifer system exists that extends over more than one county and that certain activities in one county could adversely impact another. Clearly the current ordinances, AB3030 plans, and local BMO activities, which were intended for localized groundwater management, are not well suited for management of a regional groundwater resource like that theorized of the Lower Tuscan aquifer system.*

2-65

(Butte County DWRC 2007)[4]

c. The EA fails to propose real time monitoring for land subsidence. Third-party independent verification, perhaps by scientists from the U.S. Geological Survey, should be incorporated by DWR and the Bureau into the project description of the 2010-2011 Water Transfer Program. We applaud the initiation of a regional GPS network in the Sacramento Valley, but remain concerned about the 13 existing extensometers in the Sacramento Valley that measure land subsidence, and a Global Positioning System land subsidence network established by one county (EA p. 13). The remaining responsibility is again deferred to the "willing sellers." Unfortunately, voluntary monitoring by pumpers does not strike us as a responsible assurance given the substantial uncertainties involved in regional aquifer responses to extensive groundwater pumping in the Sacramento Valley.

Not only is there a failure to discuss real time monitoring for subsidence, there also is no discussion regarding delayed subsidence that should also be monitored according to the findings of Dr. Kyran Mish, Presidential Professor, School of Civil Engineering and Environmental Science at the University of Oklahoma. Dr. Mish notes: "It is important to understand that *all* pumping operations have the potential to produce such settlement, and when it occurs with a settlement magnitude sufficient enough for us to notice at the surface, we call it *subsidence*, and we recognize that it is a serious problem (since such settlements can wreak havoc on roads, rivers, canals, pipelines, and other critical infrastructure)," (Mish 2008).. Dr. Mish further explains that "[b]ecause the clay soils that tend to contribute the most to ground settlement are highly impermeable, their subsidence behavior can continue well into the future, as the rate at which they settle is governed by their low permeability." *Id.* "Thus simple real-time monitoring of ground settlement can be viewed as an *unconservative* measure of the potential for subsidence, as it will generally tend to underestimate the long-term settlement of the ground surface." *Id.* (emphasis added). 2-66

The EA acknowledges the existence and cause of serious subsidence in one area of the valley. "The area between Zamora, Knights Landing, and Woodland has been most affected (Yolo County 2009). Subsidence in this region is generally related to groundwater pumping and subsequent consolidation of aquifer sediments," (EA p. 3-13). This fact alone illustrates the need for more extensive analysis throughout the export area in an EIS.

d. The 2010-2011 Water Transfer Program EA fails to require streamflow monitoring. The 2009 DWB EA/FONSI deferred the monitoring and mitigation planning to "willing sellers," but even that requirement has been completely eliminated. We can't emphasize enough the importance of frequent and regular streamflow monitoring by either staff of the project agencies or a third, independent party such as the USGS, paid for by Project transfer surcharges mentioned above. It is clear from existing scientific studies and the EA that the Project may have significant impacts on the aquifers replenishment and recharging of the aquifers, so the 2010-2011 Water Transfer Program should therefore require extensive monitoring of regional streams. The radius for monitoring should be large, not the typical two to three miles as usually used by DWR and the Bureau. Though not presented for the 2010-2011 Water Transfers Program, the *Stony Creek Fan Aquifer Performance Testing Plan,* which is a much smaller project, recognized 2-67

that there may be a drawdown effect on the aquifer by considering results from a DWR Northern District spring 2007 production well test (EA/FONSI p. 28). However, it did not assess the anticipated scope of that effect—or even what level of effect would be considered acceptable. Moreover, the results from that test well indicate that the recharge source for the solitary production well "is most likely from the foothills and mountains, to the east and north"—which at a minimum is more than fifteen miles away. (DWR, Glenn-Colusa Irrigation District Aquifer Performance Testing Glenn County, California).

The Butte County Department of Water and Resource Conservation have identified streams that must be monitored to determine impacts to stream flows that would be associated with pumping the Lower Tuscan Aquifer. These "[s]treams of interest" are located on the eastern edge of the Sacramento Valley and include: Mill Creek, Deer Creek, Big Chico Creek, Butte Creek, and Little Dry Creek (The Butte County DWRC 2007). The department described the need and methodology for stream flow gauging:

> *The objective of the stream flow gaging is to determine the volume of surface water entering into or exiting the Lower Tuscan Aquifer along perennial streams that transect the aquifer formation outcropping for characterization of stream-aquifer interactions and monitoring of riparian habitat. Measurement of water movement into or out of the aquifer will allow for testing of the accuracy of the Integrated Water Flow Model, an integrated surface water-groundwater finite differential model developed for the eastern extent of the Lower Tuscan aquifer.*
>
> *Two stream gages will be installed on each of five perennial streams crossing the Lower Tuscan Formation to establish baseline stream flow and infiltration information. The differences between stream flow measurements taking upstream and downstream of the Lower Tuscan Formation are indications of the stream-aquifer behavior. Losses or gains in stream volume can indicate aquifer recharge or discharge to or from the surface waters.*
> *Id.*

As evident in the following conclusory assertions, the draft EA/FONSI fails to define the radius of influence associated with the aquifer testing and thus entirely fails to identify potential significant impacts to salmon:

> "An objective in planning a groundwater substitution transfer is to ensure that groundwater levels recover to their typical spring high levels under averag hydrologic conditions. Because groundwater levels generally recover at the expense of stream flow, the wells used in a transfer should be sited and pumped in such a manner that the stream flow losses resulting from pumping peak during the wet season, when losses to stream flow minimally affect other legal users of water," (EA p. 2-7).

2-68

As mentioned above, streamflow monitoring is not a requirement of the Project, which is unfathomable. Monitoring of flow on streams associated with the Lower Tuscan Formation is particularly important to the survival of Chinook salmon which use these "streams of interest" to spawn and where salmon fry rear. Intensive groundwater pumping would likely lower water table elevations near these streams of interest, decreasing surface flows, and therefore reducing salmon spawning and rearing habitat through dewatering of stream channels in these northern counties. This would be a significant adverse impact of the Project and is ignored by the EA.

A similar effect has been observed in the Cosumnes River, where "[d]eclining fall flows are limiting the ability of the Cosumnes River to support large fall runs of Chinook salmon." This is a river that historically supported a large fall run of Chinook Salmon. *Id.* Indeed, "[a]n early study by the California Department of Fish and Game . . . estimated that the river could support up to 17,000 returning salmon under suitable flow conditions." *Id.*, citing CDFG 1957 & USFWS 1995. But "[o]ver the past 40 years fall runs ranged from 0 to 5,000 fish according to fish counts by the CDFG (USFWS 1995)," and "[i]n recent years, estimated fall runs have consistently been below 600 fish, according to Keith Whitener," (Fleckenstein, *et al*. 2004). Indeed, "[f]all flows in the Cosumnes have been so low in recent years that the entire lower river has frequently been completely dry throughout most of the salmon migration period (October to December)." *Id.*

Research indicates that "groundwater overdraft in the basin has converted the [Cosumnes River] to a predominantly losing stream, practically eliminating base flows…." (Fleckenstein, *et al*. 2004). And "investigations of stream-aquifer interactions along the lower Cosumnes River suggest that loss of base flow support as a result of groundwater overdraft is at least partly responsible for the decline in fall flows." *Id.* Increased groundwater withdrawals in the Sacramento basin since the 1950s have substantially lowered groundwater levels throughout the county." *Id.*

The draft EA acknowledges the potential for impacts to special status fish species from altered river flows and commits to maintaining flow and temperature requirements already in place (p. 3-59). The coalition would like to have greater assurance of a commitment considering that the Bureau and DWR failed to meet the X2 standard in February 2009. The Bureau and DWR should make X2 compliance and streams of interest monitoring in real time part of their permit amendment applications to the SWRCB this spring. If stream levels are affected by groundwater pumping, then pumping would cease. 2-69

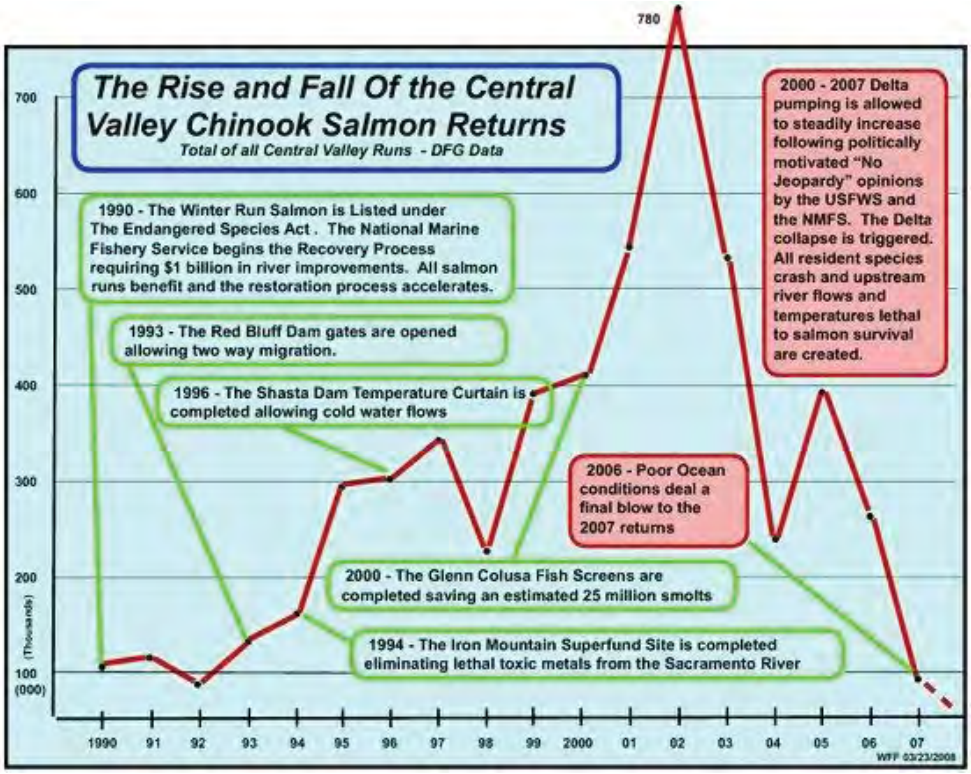
Unfortunately, the draft EA fails to anticipate possible stream flow declines in important salmon rearing habitat in the 2010-2011 Water Transfer Program area. Many important streams, such as Mud Creek, are located within the 2010-2011 Water Transfer Program and flows through probable Tuscan recharge zones, yet are not mentioned in the EA (also see comments above regarding Rock Creek). While a charged aquifer is likely to add to base flow of this stream, a de-watered aquifer would pull water from the stream. According to research conducted by Dr. Paul Maslin, Mud Creek provides advantageous rearing habitat for out-migrating Chinook salmon 2-70

(1996). Salmon fry feeding in Mud Creek grew at over twice the rate by length as did fry feeding in the main stem of the Sacramento River. *Id.*

Another tributary to the Sacramento River, Butte Creek, hosts spring-run Chinook salmon, a threatened species under the Endangered Species Act. 64 Fed. Reg. 50,394 (Sept. 16, 1999). Butte Creek contains the largest remaining population of the spring-run Chinook and is designated as critical habitat for the species. *Id*. at 50,399; 70 Fed. Reg. 52,488, 52,590-91 (Sept. 2, 2005). Additionally, Butte Creek provides habitat for the threatened Central Valley steelhead. *See* 63 Fed. Reg. 13,347 (Mar. 19, 1998); 70 Fed. Reg. at 52,518. While Butte Creek is mentioned in the EA (p. 2-11, 3-4, 3-49, 3-57), the only protect afforded this vital tributary are statements that cropland idling will not occur adjacent to it, yet that is contradicted on page 3-19. The Bureau should not overlook the importance of rearing streams, and should not proceed with this Project unless and until adequate monitoring and mitigation protocols are established.

Existing mismanagement of water in California's rivers, creeks, and groundwater has already caused a precipitous decline in salmon abundance. There is no mention of the fall-run salmon numbers in the main stem Sacramento River or its essential tributaries despite the fact that their numbers dropped precipitously in 2007 (see graphic below) 2008, and 2009. After the commercial salmon fishery was closed for two years for fear of pushing these fish to extinction, scientists are waiting until February 2010 to determine if the commercial and sport fishing seasons will open this year. As noted above, the EA casually asserts that maintaining flow and temperature requirements in the main stem will be sufficient to protect aquatic species, but it fails to consider the impacts of almost 400,000 AF of water transfers, fallowing, and groundwater substitution on the tributaries. How much additional pumping does the Project represent, given CVP and SWP contractual commitments, available reservoir supplies, and other environmental restrictions south of the Delta? The EA and DWR's missing environmental review are silent on this.

Where are the data to support assertions that impacts to aquatic species will be below a level of significance? Habitat values are also essential to many other special status species that utilize the aquatic and/or riparian landscape including, but not limited to, giant garter snake, bank swallow, greater sandhill crane, American shad, etc. Where is the documentation of the potential impacts to these species?



Graphic is courtesy of Dick Pool.

In addition to the direct decline in the salmon populations is the food chain affect that will influence species such as killer whales.

3. The EA fails to address the significant unknown risks raised by the 2010-2011 Water Transfer Program's proposed groundwater extraction.

The EA fails to identify and address the significant unknown risks associated with this Project. There are substantial gaps in scientists' understanding of how the aquifer system recharges.

The EA fails to reveal the scientifically known and unknown characteristics of the Lower Tuscan aquifer. Expert opinion and experience is offered by Professor Karin Hoover from CSU Chico who asserts that: "[T]o date there exists no detailed hydrostratigraphic analysis capable of distinguishing the permeable (water-bearing) units from the less permeable units within the subsurface of the Northern Sacramento Valley. In essence, the thickness and extent of the water-bearing units has not been adequately characterized." (p. 1) 2-71

Though the Project fails to disclose the limitations in knowledge of the geology and hydrology of the northern counties, it was disclosed in 2008 in the EA for the *Stony Creek Fan Aquifer Performance Testing Plan* (Testing Plan EA). It revealed that there is also limited understanding of the interaction between the affected aquifers, and how that interaction will affect the ability of the aquifers to recharge. The Testing Plan EA provides:

> *The Pliocene Tuscan Formation lies beneath the Tehama Formation in places in the eastern portion of the SCF Program Study Area, although its extent is not well defined. Based on best available information, it is believed to occur at depths ranging between approximately 300 and 1,000 feet below ground surface. It is thought to extend and slope upward toward the east and north, and to outcrop in the Sierra Nevada foothills. The Tuscan Formation is comprised of four distinct units: A, B C and D (although Unit D is not present within the general project area). Unit A, or Upper Tuscan Formation, is composed of mudflow deposits with very low permeability and therefore is not important as a water source. Units B and C together are referred to as the Lower Tuscan Formation. Very few wells penetrate the Lower Tuscan Formation within the SCF Program study area.*

(The Testing Plan EA/FONSI at p. 23). The Tehama Formation, however, generally behaves as a semi-confined aquifer system and the EA contains no discussion of its relationship with the adjoining formations. Nor is there any discussion of the role of the Pliocene Tehama Formation as "the primary source of groundwater produced in the area," (DWR 2003).

The EA fails to offer any in-depth analysis of which strata in the aquifers will be most likely affected by the 2010-2011 Water Transfer Program's proposed extraction of groundwater. Thousands of domestic wells are in the upper layers of the aquifers are not even considered in the EA. In addition, the EA provides no assessment of the interrelationship of varying strata in the aquifers in the Sacramento Valley or between the aquifers themselves.

The EA fails to provide basic background information regarding the recharge of groundwater. The documents states, "Groundwater is recharged by deep percolation of applied water and rainfall infiltration from streambeds and lateral inflow along the basin boundaries," (EA p. 3-10). How was the conclusion reached that applied water leads to recharge of the aquifer? Where are the supporting data? This claim is unsubstantiated by any of the work that has been performed to date. For example, the RootZone water balance model used by a consultant with Glenn Colusa Irrigation District, Davids Engineering, was designed to simulate root zone soil moisture. It balances incoming precipitation and irrigation against crop water usage and evaporation, and whatever is left over is assigned to "deep percolation." Deep percolation in this case means below the root zone, which is anywhere from a few inches to several feet below the surface, depending on the crop. There is absolutely no analysis that has been performed to insure that applied water does, indeed, recharge the aquifer. For example, if the surface soils were to dry out, water that had previously migrated below the root zone might be pulled back up to the surface by capillary forces. In any case, the most likely target of the "deep percolation" water in the Sacramento Valley is the unconfined, upper strata of the aquifer and possibly the Sacramento River. The EA has not demonstrated otherwise.

2-72

A public hearing concerning the Monterey Agreement was held in Quincy on November 29, 2007 and hosted by DWR. At the hearing Barbara Hennigan presented the following testimony: "So for the issues of protecting the water quality, protecting the stream flow in the Sacramento, one of the things that we have learned is that the Sacramento River becomes a permanently

losing stream at the Sutter buttes. When I first started looking at the water issues that point was at Grimes south of the [Sutter B]uttes, now it is at Princeton, moving north of the buttes. As the Sacramento becomes a losing stream farther and farther north because of loss of the Lower Tuscan Aquifer, that means that it, there will be less water that the rest of the State relies on," (http://www.water.ca.gov/environmentalservices/docs/mntry_plus/comments/Quincy.txt). How and when will the Bureau and DWR address this enormously important condition and amplify the risk to not only the northstate, but the entire State of California?

4. The EA contains numerous errors and omissions regarding groundwater resources.

There are numerous errors, omissions, and negligence in addressing existing conditions before and with the Project in Section 3.2 Groundwater Resources. The failure to address stated problematic conditions and the lack of accuracy in this section of so many elemental issues and facts raises questions about the content of the entire EA and FOSI. A partial list of statements and questions follows.

- On pages 3-10, 3-12, and 3-13 of the EA the Sierra Nevada [mountain range] and "Coast ranges" are identified, but there is no mention of the southern Cascade Range that is a prominent geologic feature of the northern Sacramento Valley and a significant contributor to the hydrology of the region. 2-73
- Page 3-12 mentions "major tributaries" to the Sacramento River, but omits the northern rivers the McCloud and the Pit. It also mentions "Stony, Cache, and Putah Creeks," but fails to mention Battle, Mill, Big Chico, and Butte creeks. These omissions again reflect an odd lack of understanding of the Cascade Range. 2-74
- The EA states quite straightforwardly on page 3-12 that, "Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage." This knowledge alone requires substantive environmental review under NEPA and CEQA. 2-75
- Page 3-12. "Groundwater production in the basin has recently been estimated to be about 2.5 million acre-feet or more in dry years." What is the citation for this assertion? 2-76
- Page 3-12. "Historically, groundwater levels in the Basin have remained steady, declining moderately during extended droughts and recovering to pre-drought levels after subsequent wet periods. DWR extensively monitors groundwater levels in the basin. The groundwater level monitoring grid includes active and inactive wells that were drilled by different methods, with different designs, for different uses. Types of well use include domestic, irrigation, observation, and other wells. The total depth of monitoring grid wells ranges from 18 to 1,380 feet below ground surface.". As presented above, groundwater levels have been changing, historically. Since the Bureau and DWR have access to a monitoring grid, for NEPA and CEQA compliance, they must present current facts, not general statements that relate to social science. 2-77

- Page 3-12. “In general, groundwater flows inward from the edges of the basin and south parallel to the Sacramento River. In some areas there are groundwater depressions associated with extraction that influence local groundwater gradients.” Where are the groundwater depressions? How have they affected groundwater gradients? How will the Project exacerbate a negative existing condition? 2-78
- Page 3-12. “Prior to the completion of CVP facilities in the area (1964-1971), pumping along the west side of the basin caused groundwater levels to decline. Following construction of the Tehama-Colusa Canal, the delivery of surface water and reduction in groundwater extraction resulted in a recovery to historic groundwater levels by the mid to late-1990s.” Please provide the citation(s). 2-79
- Pg 3-15 "According to the SWRCB, there are no elevated concentrations of arsenic or selenium in the Sacramento Groundwater Basin." The GAMA domestic well Project, Tehama County Focus Area, 2009, Arsenic in Domestic and Public Wells indicates variable levels of arsenic in the cited basin. The study found that, "Fourteen percent of the wells [in the Tehema County focus area] had concentrations of both arsenic and iron above their associated CDPH MCLs or secondary MCLs." 2-80
- Page 3-15. “The State Water Code (Section 1745.10) requires that for short term water transfers, the transferred water may not be replaced with groundwater unless the following criteria are met (SWRCB 1999)…” The Project is not a short term water transfer, but a set of serial actions in multiple years by the agencies, sellers, and buyers without the benefit of comprehensive environmental analysis under NEPA and CEQA. 2-81
- Page 3-16. “California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred. These principles must be met for approval of water transfers.” The disclosures and analyses contained in the EA, FONSI, and its appendices are inadequate to satisfy the California Water Code requirements and the Bureau’s requirements under NEPA. DWR has clearly failed its obligations under CEQA by providing no disclosure or analysis. 2-82

E. Other resource impacts flowing from corrected chains of cause and effect are unrecognized in the EA and should be considered in an EIS instead.

Regarding surface water reservoir operations in support of the 2010-2011 Water Transfer Program, we have several questions and concerns:

- Regarding fisheries, we note that the Bureau intends to comply with the State Water Resources Control Board’s Water Rights Orders 90-05 and 91-01 in order to provide temperature control at or below 56 degrees Fahrenheit for anadromous fish, their redds, and hatching wild salmonid fry, and to provide minimum instream flows of 3,250 cubic feet per second (cfs) between September 1 and February 28, and 2,300 cfs between 2-83

March 1 and August 31. How will the Bureau and DWR comply with Fish and Game Code Section 5937—to keep fish populations below and above their dams in good condition, as they approve transfers of CVP water from willing CVP contractors to willing buyers? We urge this compliance effort be integrated with the streams of interest and groundwater monitoring programs we recommended above.

- We also find confusing the EA's treatment of instream flows for fisheries. On one hand, minimum flows and temperature criteria established in the above-mentioned water rights orders is to be adhered to by the Bureau for the Sacramento River. The necessity for April and May storage is not well explained. 2-84

- Concerning the social and economic effects of the proposed 2010-2011 Water Transfer Program, crop idling transfers will delete fields from production and result in employment impacts on Sacramento Valley's agricultural labor market at a time when the national recession is at its worst. The lack of descriptive information about what crops are to be idled by specific "willing sellers" means that a reasonably plausible estimate of employment impacts in the Sacramento Valley are unavailable, rendering the EA inadequate from this standpoint. Has the Bureau reviewed the President's policies on economic recovery to be certain that its water transfer program that would shift employment impacts from one Valley to another rather than work to increase employment generally is consistent with the intent of the President and Congress? What would be the effects of employment shifting on the poverty rates of Sacramento Valley counties? Such an estimate, provided with basic information about what acreages of specific crops are to be idled, is within the reach of the Bureau to make. 2-85

- On its own terms, the Bureau's EA makes no attempt to establish baseline agricultural crop acreages for each agricultural county offering or seeking DWB water in order to calculate and apply its 20 percent threshold for limiting economic impacts to agriculture in selling counties. Moreover, this 20 percent threshold needs to be incorporated into the description of the Proposed Action Alternative, since it appears to be an integral part of DWB actions. 2-86

- Regarding public health and safety, the EA negligently denies the potential for impacts (p.3-1). Fluctuating domestic wells can lead to serious contamination from heavy metals and non-aqueous fluids. Additionally, there are numerous hazardous waste plumes in Butte County, which could easily migrate with the potential increased groundwater pumping proposed for the Project. All of this must be disclosed and analyzed. 2-87

In general, the 2010-2011 Water Transfer Program EA/FONSI—and by logical implication, DWR's actions—consistently avoids full disclosure of existing conditions and baseline data, rendering their justifications for the 2010-2011 Water Transfer Program at best incoherent, and at worst, dangerous to groundwater users and resources, and to vulnerable fisheries in tributary streams of the Sacramento River. 2-88

F. The 2010-2011 Water Transfer Program is likely to have a cumulatively significant impact on the environment.

The draft EA/FONSI does not reveal that the current Project is part of a much larger set of plans to develop groundwater in the region, to develop a "conjunctive" system for the region, and to integrate northern California's groundwater into the state's water supply. These are plans that the Bureau, together with DWR and others, have pursued and developed for many years. Indeed, one of the plans—the short-term phase of the Sacramento Valley Water Management Program—is the subject of an ongoing scoping process for a Programmatic EIS that has not yet been completed. 2-89

In assessing the significance of a project's impact, the Bureau must consider "[c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. §1508.25(a)(2). A "cumulative impact" includes "the impact on the environment which results from the incremental impact of the action when added to *other past, present and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Id.* §1508.7. The regulations warn that "[s]ignificance cannot be avoided by terming an action temporary or by breaking it down into small component parts." *Id.* §1508.27(b)(7).

An environmental impact statement should also consider "[c]onnected actions." *Id.* §1508.25(a)(1). Actions are connected where they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." *Id.* §1508.25(a)(1)(iii). Further, an environmental impact statement should consider "[s]imilar actions, which when viewed together with other *reasonably foreseeable or proposed agency actions*, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." *Id.* §1508.25(a)(3) (emphasis added). 2-90

As detailed below, instead of assessing the cumulative impacts of the proposed action as part of the larger program that even the Bureau has recognized should be subject to a programmatic EIS (but for which no programmatic EIS has been completed), the Bureau has attempted to separate this program and approve it through an inadequate EA. Further, the Bureau has failed to take into account the cumulative effects of other groundwater and surface water projects in the region, the development of "conjunctive" water systems, and the anticipated further integration of Sacramento Valley surface and ground water into the state water system.

G. The Environmental Assessment Fails to Meet the Requirements of NEPA.

Even if an EIS were not clearly required here, the draft EA/FONSI prepared by the Bureau violates NEPA on its own. As discussed above, the draft EA does not provide the analysis necessary to meet NEPA's requirements and to support its proposed finding of no significant impact. Further, as outlined above, the draft document fails to provide a full and accurate 2-91

description of the proposed Project, its relationship to myriad other water transfer and groundwater extraction projects, its potentially significant adverse effects on salmon critical habitat in streams of interest tributary to the Sacramento River, and an assessment of the cumulative environmental impacts of the 2010-2011 Water Transfer Program when considered together with other existing and proposed water programs.

Additionally, the draft EA/FONSI fails to provide sufficient evidence to support its assertions that the 2010-2011 Water Transfer Program would have no significant impacts on the human or natural environments, neither decision makers nor the public are fully able to evaluate the significance of the 2010-2011 Water Transfer Program's impacts. These informational failures complicate the Coalition's efforts to provide meaningful comments on the full extent of the potential environmental impacts of the DWB and appropriate mitigation measures. Accordingly, many of the Coalition's comments include requests for additional information. 2-92

1. The EA Fails to Consider a Reasonable Range of Alternatives.

NEPA's implementing regulations call for analysis of alternatives is "the heart of the environmental impact statement," 40 C.F.R. §1502.14, and they require an analysis of alternatives within an EA. *Id.* §1408.9. The statute itself specifically requires federal agencies to:

> *study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning available uses of resources.*

42 U.S.C. §4332(2)(E). Here, because the Bureau's EA considers only the proposed Project and a "No Action" alternative, the EA violates NEPA. 2-93

The case law makes clear that an adequate analysis of alternatives is an essential element of an EA, and is designed to allow the decision maker and the public to compare the environmental consequences of the proposed action with the environmental effects of other options for accomplishing the agency's purpose. The Ninth Circuit has explained that "[i]nformed and meaningful consideration of alternatives … is … an integral part of the statutory scheme." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (holding that EA was flawed where it failed adequately to consider alternatives). An EA must consider a reasonable range of alternatives, and courts have not hesitated to overturn EAs that omit consideration of a reasonable and feasible alternative. *See People ex rel. Van de Kamp v. Marsh*, 687 F.Supp. 495, 499 (N.D. Cal. 1988); *Sierra Club v. Watkins*, 808 F.Supp. 852, 870-75 (D.D.C. 1991).

Here, there are only two alternatives presented: the No Action and the Proposed Action. The lack of *any* alternative action proposal is unreasonable and is by itself a violation of NEPA's requirement to consider a reasonable range of alternatives.

Even more significantly, there are numerous other alternative ways to ensure water is allocated reliably when California experiences dry hydrologic years. We described several elements of reasonable alternatives above. These are the alternatives that should have been presented for the Bureau's draft EA/FONSI on the 2010-2011 Water Transfer Program to comply with NEPA. 42 U.S.C. § 4332(2)(E). 2-94

2. The EA Fails to Disclose and Analyze Adequately the Environmental Impacts of the Proposed Action

The discussion and analysis of environmental impacts contained in the EA is cursory and falls short of NEPA's requirements and stems from having an unclear and poorly described narrative for the proposed 2010-2011 Water Transfer Program. It obscures realistic chains of cause and effect, which in turn prevent accurate and comprehensive accounting of environmental baselines and measurement of the DWB's potential impacts. NEPA's implementing regulations require that an EA "provide sufficient evidence and analysis for determining whether to prepare an [EIS]." 40 C.F.R. §1508.9(a). For the reasons discussed above, the EA fails to discuss and analyze the environmental effects of the water transfers, crop idling, and groundwater substitution proposed by the 2010-2011 Water Transfer Program. The Bureau must consider and address the myriad of environmental consequences that are likely to flow from this proposed agency action. 2-95

Along with our significant concerns about the adequacy of the proposed monitoring, the draft EA/FONSI also fails to explain what standards will be used to evaluate the monitoring data, and on what basis a decision to modify or terminate the pumping would be made. In light of the document's silence on these crucial issues, the draft EA/FONSI's conclusion that there will not be significant adverse impacts withers quickly under scrutiny.

3. The EA Fails to Analyze Cumulative Impacts Adequately.

The Ninth Circuit Court makes clear that NEPA mandates "a useful analysis of the cumulative impacts of past, present and future projects." *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). Indeed, "[d]etail is required in describing the cumulative effects of a proposed action with other proposed actions." *Id.* The very cursory cumulative effects discussion contained in the EA plainly fails to meet this standard. 2-96

As discussed in Part I.C. above, the proposed DWB does not exist in a vacuum, and is in addition to a broader program to develop regional groundwater resources and a conjunctive use system. The 2010-2011 Water Transfer Program is also only one of several proposed and existing projects that affect the regional aquifers. The existence of these numerous related projects makes an adequate analysis of cumulative impacts especially important.

4. The Bureau Has Failed to Consider the Cumulative Impact of Other Groundwater Development and Surface Water Diversions Affecting the Region

In addition to the improper segmentation evident in the draft EA/FONSI, the assessment of environmental impacts is further deficient because the Bureau has failed to consider the cumulative impacts of the proposed groundwater extraction when taken in conjunction with other projects proposed for the development of groundwater and surface water.

The Bureau and its contractors are party to numerous current and reasonably foreseeable water programs that are related to the water transfers contemplated in the DWB including the following:

- Sacramento Valley Integrated Regional Water Management Plan (2006)
- Sacramento Valley Regional Water Management Plan (January 2006)
- Stony Creek Fan Conjunctive Water Management Program
- Sacramento Valley Water Management Agreement (Phase 8, October 2001)
- Draft Initial Study for 2008-2009 Glenn-Colusa Irrigation District Landowner Groundwater Well Program
- Regional Integration of the Lower Tuscan Groundwater Formation into the Sacramento Valley Surface Water System Through Conjunctive Water Management (June 2005)
- Stony Creek Fan Aquifer Performance Testing Plan for 2008-09
- Lower Tuscan Integrated Planning Program, a program funded by the Bureau that will "integrate the Lower Tuscan formation aquifer system into the management of regional water supplies."
- Annual forbearance agreements (2008 had an estimated 160,00 acre feet proposed).

2-97

We briefly describe some of their key elements here.

Stony Creek Fan Conjunctive Water Management Program. The SCF Aquifer Plan is part of and in furtherance of the Stony Creek Fan Conjunctive Water Management Program ("SCF Program"). This program is being carried out by GCID, Orland-Artois and Orland Unit Water Association.

The long-term objective of the SCF Program is the development of a "regional conjunctive water management program consisting of a direct and in-lieu recharge component, a groundwater production component, and supporting elements.…" (SVWMA: Project 8A Stony Creek Fan Conjunctive Water Management Program
("SVWMA Project 8A"), at 8A-1). The potential supply from such a program was estimated at 50,000 af per year to 100,000 af per year. *Id.*

The SCF Program has 3 Phases: (1) a feasibility study; (2) a demonstration project; and (3) project implementation. Phase I of the SCF Program has already been completed. The SCF

Aquifer Plan described in a draft EA/FONSI is part of Phase II of the larger SCF Program. Phase III of the SCF Program will implement the program's goal of integrating test and operational production wells into the water supply systems for GCID, Orland-Artois, and Orland Unit Water Association for long-term groundwater production in conjunction with surface water diversions.

The Bureau is well aware of the SCF Program, but declined to analyze the environmental effects of the program as a whole, and simply considered the effects of an isolated component of the larger program. Indeed, the Bureau recently awarded a grant to GCID to fund the SCF Program. The Bureau's grant agreement states that the SCF Program "target[s] the Lower Tuscan Formation and possibly other deep aquifers in the west-central portion of the Sacramento Valley … as the source for all or a portion of the additional groundwater production needed to meet [the SCF Partners'] respective integrated water management objectives." BOR Assistance Agreement No. 06FG202103 at p. 2. The agreement further provides that provides that "[a]dditional test wells and production wells will be installed within the Project Area." *Id.*

Moreover, the Bureau's own description of the reasons for not choosing the "No Action" alternative indicate the Bureau's recognition that the primary goal of the SCF Aquifer Plan is to realize the objectives of the SCF Program – "increas[ing] reliable water supplies through conjunctive management of groundwater and surface water" at a fast pace. *See* EA/FONSI at p. 5. The Bureau was obligated to assess the potentially significant environmental impacts associated with such conjunctive management of groundwater and surface water, and wholly failed to do so.

There are serious concerns raised by the proposal to engage in conjunctive management of groundwater and surface water that are not addressed in the EA. For example, in 1994, following seven years of low annual precipitation, Western Canal Water District and other irrigation districts in Butte, Glenn and Colusa counties exported 105,000 af of water extracted from the Tuscan aquifers to buyers outside of the area. This early experiment in the *conjunctive use* of the groundwater resources – conducted without the benefit of environmental review – caused a significant and immediate adverse impact on the environment (Msangi 2006). Until the time of the water transfers, groundwater levels had dropped but the aquifers had sustained the normal demands of domestic and agricultural users. The water districts' extractions, however, lowered groundwater levels throughout the Durham and Cherokee areas of eastern Butte County (Msangi 2006). The water level fell and the water quality deteriorated in the wells serving the City of Durham (Scalmanini 1995). Irrigation wells failed on several orchards in the Durham area. One farm never recovered from the loss of its crop and later entered into bankruptcy. Residential wells dried up in the upper-gradient areas of the aquifers as far north as Durham (.

<u>The SCF Program is a Component of the Sacramento Valley Water Management Program.</u> The Sacramento Valley Water Management Program (Phase 8) ("SVWMP") also includes the SCF Program as one of its elements. (SVWMA Project 8A at pp. 8A-1 to 8A-13).

The SVWMP recognizes that the SCF Program "has the potential to improve operational flexibility on a regional basis resulting in measurable benefits locally in the form of predictable, sustainable supplies, *and improved reliability for water users' elsewhere in the state*." *Id.* at p. 8A-2 (emphasis added). By piecemealing this program improperly and analyzing only the small component of the SCF Program, the Bureau has failed to assess the environmental impacts associated not just with the anticipated conjunctive use of the groundwater, but also the effect of the anticipated export of water to other regions of the state.

Additionally, approximately five years ago, on August 5, 2003, the Bureau published a notice in the Federal Register announcing its intention to prepare a programmatic EIS to analyze the short-term phase of the SVWMP. 68 Fed. Reg. 46218, 46219 (Aug. 5, 2003). Like the SVWMP, this "Short-term Program" for which the Bureau stated its intent to conduct a programmatic EIS included implementation of the SCF Program. *Id.* at 46219, 46220.

The SCF Program is Also a Component of the Sacramento Valley Integrated Regional Water Management Program. The Bureau has been working with GCID and others to realize the Sacramento Valley Integrated Regional Water Management Program ("SVIRWMP"). SVIRWMP is comprised of a number of sub-regional projects, including the SCF Program. *See* SVIRWMP, Appendix A at A-5; BOR Assistance Agreement No. 06FG202103. Here again, even though the SCF Aquifer Plan is clearly a necessary component of the SCF Program – which is in turn a component of the SVIRWMP – the draft EA/FONSI failed to even acknowledge, let alone assess, the cumulative impacts of these related projects.

Most obviously, the draft EA wholly fails to assess the impact of the Bureau's *Sacramento Valley Regional Water Management Plan (2006)* (SVRWMP) and the forbearance water transfer program that the Bureau and DWR facilitate jointly. As noted above, the Programmatic EIS for the 2002 Sacramento Valley Water Management Agreement or Phase 8 Settlement was initiated, but never completed, so the SVRWMP was the next federal product moving the Phase 8 Settlement forward. The stated purpose of the Phase 8 Settlement and the SVRWMP are to improve water quality standards in the Bay-Delta and local, regional, and statewide water supply reliability. In the 2008 forbearance program, 160,000 af was proposed for transfer to points south of the Delta. To illustrate the ongoing significance of the demand on Sacramento Valley water, we understand that GCID alone entered into "forbearance agreements" to provide 65,000 af of water to the San Luis and Delta Mendota Water Association in 2008, 80,000 af to State Water Project contractors in 2005, and 60,000 af to the Metropolitan Water District of Southern California in 2003.

Less obvious, but certainly available to the Bureau, are the numerous implementation projects that Phase 8 signatories are pursuing, such as Glenn Colusa Irrigation District's (GCID) 2008 proposal to divert groundwater pumped from private wells to agricultural interests in the District. *See* Attach. (GCID Proposed Negative Declaration, GCID Landowner Groundwater Well Program for 2008-09). Additionally, the draft EA does not consider the cumulative effect of the Lower Tuscan Integrated Planning Program, a program funded by the Bureau that will "integrate

the Lower Tuscan formation aquifer system into the management of regional water supplies." Grant Agreement at 4. This program, as described by the Bureau, will culminate in the presentation of a proposed water management program for the Lower Tuscan Formation for approval and implementation by the appropriate authorities. Clearly, the cumulative impact of this program and the 2010-2011 Water Transfer Program's proposed groundwater extraction should have been assessed.

Finally, with the myriad projects and programs that are ignored in the EA and have never been analyzed cumulatively, the EA finally discloses that there could be a *devastating* impact to groundwater: "The reduction in recharge due to the decrease in precipitation and runoff in the past years in addition to the increase in groundwater transfers would lower groundwater levels. Multi-year groundwater acquisition under cumulative programs operating in similar areas of the Sacramento Valley could further reduce groundwater levels. Groundwater levels may not fully recover following a transfer and may experience a substantial net decline in groundwater levels over several years. This would be a substantial cumulative effect," (EA p. 3-108). While the honesty is refreshing, the lack of comprehensive monitoring, mitigation, and project cessation mechanisms is startling. This alone warrants the preparation of an EIS.

Here again, the current document does not discuss or analyze these potential impacts, their potential scope or severity, or potential mitigation efforts. Instead, it relies on the existence of local ordinances, plans, and oversight with the monitoring and mitigation efforts of individual "willing sellers" to cope with any adverse environmental effects. However, as we have shown above, for example, the Glenn County management plan is untested and does not provide adequate protection and monitoring of the region's important groundwater resources. To further clarify the inadequacy of relying on local plans and ordinances, Butte County's Basin Management Objectives have no enforcement mechanism and Butte County's Chapter 33, while it requires CEQA review for transfers that include groundwater, has never been tested. As one can see, there is very limited local protection for groundwater and no authority to influence pumping that is occurring in a different county.

5. The 2010-2011 Water Transfer Program is likely to serve as precedent for future actions with significant environmental effects.

As set forth above, this Project is part of a broader effort by the Bureau and DWR to develop groundwater resources and to integrate GCID's water into the state system. For these reasons, the 2010-2011 Water Transfer Program is likely to "establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration" (40 C.F.R. §1508.27(b)(6)), and should be analyzed in an EIS. 2-98

6. The 2010-2011 Water Transfer Program has potential adverse impacts for a threatened species.

As the Bureau of Reclamation is well aware, the purpose of the ESA is to conserve the ecosystems on which endangered and threatened species depend and to conserve and recover those species so that they no longer require the protections of the Act. 16 U.S.C. § 1531(b), ESA § 2(b); 16 U.S.C. § 1532(3), ESA §3(3) (defining "conservation" as "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary"). "[T]he ESA was enacted not merely to forestall the extinction of species (i.e., promote species survival), but to allow a species to recover to the point where it may be delisted." *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Service*, 378 F3d 1059, 1069 (9th Cir. 2004). To ensure that the statutory purpose will be carried out, the ESA imposes both substantive and procedural requirements on all federal agencies to carry out programs for the conservation of listed species and to insure that their actions are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536. *See NRDC v. Houston*, 146 F.3d 1118, 1127 (9th Cir. 1998) (action agencies have an "affirmative duty" to ensure that their actions do not jeopardize listed species and "independent obligations" to ensure that proposed actions are not likely to adversely affect listed species). To accomplish this goal, agencies must consult with the Fish and Wildlife Service whenever their actions "may affect" a listed species. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a). Section 7 consultation is required for "any action [that] may affect listed species or critical habitat." 50 C.F.R. § 402.14. Agency "action" is defined in the ESA's implementing regulations to "mean all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States." 50 C.F.R. § 402.02.

The giant garter snake ("GGS") is an endemic species to Central Valley California wetlands. (Draft Recovery Plan for the Giant Garter Snake ("DRP") 1). The giant garter snake, as its name suggests, is the largest of all garter snake species, not to mention one of North America's largest native snakes, reaching a length of up to 64 inches. Female GGS tend to be larger than males. GGS vary in color, especially depending on the region, from brown to olive, with white, yellow, or orange stripes. The GGS can be distinguished from the common garter snake by its lack of red markings and its larger size. GGS feed primarily on aquatic fish and specialize in ambushing small fish underwater, making aquatic habitat essential to their survival. Females give birth to live young from late July to early September, and brood size can vary from 10 to up to 46 young. Some studies have suggested that the GGS is sensitive to habitat change in that it prefers areas that are familiar and will not typically travel far distances. The EA discloses that one GGS study in Colusa County revealed the "longest average movement distances of 0.62 miles, with the longest being 1.7 miles, for sixteen snakes in 2006, and an average of 0.32 miles, with the longest being 0.6 miles for eight snakes in 2007. However, in response to droughts and other changes in water availability, the GGS has been known to travel up to 5 miles in only a few days,

but the impacts on GGS survival and reproduction from such extreme conditions are unknown due to the deficiency in data and analysis.

Flooded rice fields, irrigation canals, and wetlands in the Sacramento Valley can be used by the giant garter snake for foraging, cover and dispersal purposes. The draft EA fails to comprehensively analyze the movements and habitat requirements for the federal and state-threatened giant garter snake and yet again defers responsibility to a future time. The 2009 Biological Assessment acknowledged the failure of Bureau and DWR to complete the Conservation Strategy that was a requirement of the 2004 Biological Opinion. (BA at p. 19-20) [The BA appears to have no page numbers] What possible excuse delayed this essential planning effort? 2-99

The 2010-2011 Water Transfer Program also proposes to delete or modify other mitigation measures previously adopted as a result of the EWA EIR process to substantially reduce significant impacts, but without showing they are infeasible. For example, the Bureau and DWR propose to delete the 160 acre maximum for "idled block sizes" for rice fields left fallow rather than flooded and to substitute for it a 320 acre maximum. (See 2003 Draft EWA EIS/EIR, p. 10-55; 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 4.) There is no evidence to support this change. In light of the agencies failure to complete the required Conservation Strategy mentioned above and the data gathered in the Colusa County study, how can the EA suggest that doubling the fallowing acreage is in any way biologically defensible? 2-100

The agencies additionally propose to delete the mitigation measure excluding Yolo County east of Highway 113 from the areas where rice fields may be left fallow rather than flooded, except in three specific areas. (See 2004 Final EWA EIS/EIR, Appendix B, p. 18, Conservation Measure # 2.) What is the explanation for this change? What are the impacts from this change? 2-101

Deleting these mitigation measures required by the EWA approval would violate NEPA and CEQA's requirements that govern whether, when, and how agencies may eliminate mitigation measures previously adopted under NEPA and CEQA. (See *Napa Citizens for Honest Government v. Napa County Board.*

The 2010-2011 Water Transfer Program fails to include sufficient safeguards to protect the giant garter snake and its habitat. The EA concludes, "The frequency and magnitude of rice land idling would likely increase through implementation of water transfer programs in the future. Increased rice idling transfers could result in chronic adverse effects to giant garter snake and their habitats and may result in long-term degradation to snake populations in the lower Sacramento Valley. In order to avoid potentially significant adverse impacts for the snake, additional surveys should be conducted prior to any alteration in water regime or landscape," (p. 3-110). To address this significant impact the Bureau proposes relying on the 2009 DWB Biological Opinion, which was a one-year BO. The expired BO highlights the Bureau and DWR's avoidance of meeting federal and state laws stating, "This office has consulted with Reclamation, both informally and formally, approximately one-half dozen times over the past 8 years on various forbearance agreements and proposed water transfers for which water is made available for delivery south of 2-102

2-100

the delta by fallowing rice (and other crops) or substituting other crops for rice in the Sacramento Valley. Although transfers of this nature were anticipated in our biological opinion on the environmental Water Account, that program expired in 2007 and, to our knowledge, no water was ever made available to EWA from rice fallowing or rice substitution. The need to consult with such frequency on transfers involving water made available from rice fallowing or rice substitution suggests to us a need for programmatic environmental compliance documents, including a programmatic biological opinion that addresses the additive effects on giant garter snakes of repeated fallowing over time, and the long-term effects of potentially large fluctuations and reductions in the amount and distribution of rice habitat upon which giant garter snakes in the Sacramento Valley depend," (p.1-2). The Coalition agrees with the U.S. Fish and Wildlife Service that programmatic environmental compliance is needed under the Endangered Species Act, NEPA, CEQA, and the California Endangered Species Act.

It is conspicuously noticeable that there isn't a claim of a less-than-significant impact for the Giant Garter Snake (*Thamnophis gigas*), in the EA/FONSI. There is really no conclusion reached due to the fundamental absence of science for the species. The Bureau should also prepare an EIS because the 2010-2011 Water Transfer Program will likely have significant environmental effects on the Giant Garter Snake, a listed threatened species under the federal Endangered Species Act and California Endangered Species Act. 40 C.F.R. §1508.27(b)(9). 2-103

II. Purpose and Need Issues of the 2010-2011 Water Transfer Program

A. The Purpose and Need Section of the EA/FONSI fails to specify the policy framework upon which the 2010-2011 Water Transfer Program is based.

Avoiding the requirements of the California Environmental Quality Act (CEQA) for the 2010-2011 Water Transfer Program does not reflect the actual environmental effects of the proposal—which are similar to the proposed 1994 Drought Water Banks and for which a final Program Environmental Impact Report was completed in November 1993. In 2000, the Governor's Advisory Drought Planning Panel report, *Critical Water Shortage Contingency Plan* promised a program EIR on a drought-response water transfer program, but was never undertaken. Twice in recent history, the state readily acknowledged that CEQA review for a major drought water banking program was appropriate. So, the 2009 DWB Notice of Exemption and complete avoidance of CEQA review for the 2010-2011 Water Transfer Program reflects an end-run around established water law through the use of water transfers, and is therefore vulnerable to legal challenge under the California Environmental Quality Act. 2-104

We question the merits of and need for the 2010-2011 Water Transfer Program itself. The existence of drought conditions at this point in time is highly questionable and reflects the state's abandonment of a sensible water policy framework given our state and national economic recession and tattered public budgets. Our organizations believe the agencies continue to go too far to help a few junior water right holders, and that at bottom the 2010-2011 Water Transfer Program is not needed. The Project intends to directly benefit the areas of California whose 2-105

water supplies are the least reliable by operation of state water law. Though their unreliable supplies have long been public knowledge, local, state, and federal agencies in these areas have failed to stop blatantly wasteful uses and diversions of water and to pursue aggressive planning for regional water self-sufficiency.

The EA/FONSI's statement of purpose and need on page 1-2 states specifically that, "The purpose of the Proposed Action is to help facilitate the transfer of water throughout the State from willing sellers of CVP water upstream of the Delta to buyers that are at risk of experiencing water shortages in 2010 and 2011." This paragraph and the section that it is in omit a coherent discussion of need. The purpose and need should also state that this transfer program would be subject to specific criteria and delineate priorities, but they are absent. 2-106

The EA/FONSI makes no attempt to place the 2010-2011 Water Transfer Program into the context of the 2005 California Water Plan that the state recently completed. It appears to us that this plan is largely on the shelf now, perhaps because of the state's dire fiscal problems. It does contain many good recommendations concerning increasing regional water self-sufficiency. However, our review of the 2005 California Water Plan reveals no mention of the 2000 Critical Water Shortage Reduction Marketing Program or any overarching drought response plan that the state could have planned for in 2005, but did not. We sadly conclude that the state of California has no meaningful adopted drought response policy, save for gubernatorial emergency declarations to suspend protective environmental regulations. This is not a sustainable water policy for California. 2-107

The purpose and need section of the EA/FONSI *and the 2009 Governor's drought emergency declaration* cry out for placing the 2010-2011 Water Transfer Program into a policy framework. What is the state doing otherwise to facilitate regional water self-sufficiency for these areas with the least reliable water rights? How does the 2010-2011 Water Transfer Program fit into the state and federal government's water and drought policy framework? Instead, the state and federal response to this third consecutive dry year falls back on simply the Drought Water Bank model that ran into environmental and water users' opposition in 1991 and 1992. Is anybody home at our water agencies?

B. The 2010-2011 Water Transfer Program is not needed because the state's current allocation system—in which the federal Bureau of Reclamation participates—wastes water profligately. 2-108

The incentive from the state's lax system of regulation of California's State Water Project and Central Valley projects is to deliver the water now, and worry about tomorrow later. Indeed, the State Water Resources Control Board (SWRCB) has been AWOL for decades. In response to inquiries from the Governor's Delta Vision Task Force last fall, the SWRCB acknowledged that while average runoff in the Delta watershed between 1921 and 2003 was 29 million acre-feet annually, the 6,300 active water right permits issued by the SWRCB is approximately 245 million acre-feet. In other words, **water rights on paper are 8.4 times greater than the real**

water in California streams diverted to supply those rights on an average annual basis. *And the SWRCB acknowledges that this "water bubble" does not even take account of the higher priority rights to divert held by pre-1914 appropriators and riparian water right holders, of which there are another 10,110 disclosed right holders.* Many more remain undisclosed.

Like federal financial regulators failing to regulate the shadow financial sector, subprime mortgages, Ponzi schemes, and toxic assets of our recent economic history, the state of California has been derelict in its management of scarce water resources here. This in no way justifies suspension of environmental and water quality regulations, for which the Governor's drought emergency declaration calls. We supplement our comments on this matter of wasteful use and diversion of water by incorporating by reference the joint complaint to the State Water Resources Control Board of the California Water Impact Network and the California Sportfishing Protection Alliance on public trust, waste and unreasonable use and method of diversion as additional evidence of a systematic failure of governance by the State Water Resources Control Board, the Department of Water Resources and the U.S. Bureau of Reclamation, filed with the Board on March 18, 2008 (attached).

We question the Bureau and DWR's contention of continued dry conditions, since the current storms have greatly increased reservoir levels throughout California. Non-state and non-federal reservoirs indicate conditions fast approaching normal for their facilities: Bullard's Bar in Yuba County is at 99 percent of the 15-year average for this time of year, EBMUD's Pardee Lake is at 97 percent of normal, San Francisco's Hetch Hetchy Reservoir on the Tuolumne River is at 152 percent of normal, while Don Pedro Reservoir on the same river is at 106 percent. The CVP's Millerton and Folsom reservoirs are below average for this time of year, but with the strong storms California is now getting through this week and into next, their storage figures are likely to improve dramatically when snowpack melts. These two reservoirs must provide water to the agricultural San Joaquin River Exchange Contractors first, and they have among the most senior rights on that river. Rice growers in the Sacramento Valley are generally expecting close to full deliveries from the CVP and their Yuba River water supplies. The CVP's own New Melones Reservoir on the Stanislaus River, which contributes to Delta water quality as well as to meeting eastern San Joaquin Valley irrigation demands, is at 87 percent of normal for this time of year. 2-109

Moreover, the SWP's terminal reservoirs at Pyramid (104 percent of average) and Castaic (99 percent of average) Lakes are right at about normal storage levels for this time of year, presumably because DWR has been releasing water from Oroville for delivery to these reservoirs.

The fact that reservoirs of the CVP with more senior responsibilities in the water rights hierarchy do well with storage for this time of year suggests that at worst this will be a year of below normal runoff in 2010—hardly a drought scenario. Low storage levels at Oroville, Shasta and San Luis may easily be attributed to redirected releases to terminal reservoirs or groundwater banks in the San Joaquin Valley and Tulare Lake Basin—these latter storage venues and their

current performance are not disclosed on DWR's Daily Reservoir Storage levels web site. Still, given what is known, from what these reservoir levels indicate many major cities and most Central Valley farmers are very likely to have enough water for this year.

The ones expecting to receive little water this year do so because of the low priority of their water service contracts within the Central Valley Project—their imported surface supplies are therefore less reliable in dry times. It is the normal and appropriate functioning of California's system of water rights law that makes it so. Among those with more junior water contractor allocations, the Metropolitan Water District and the Santa Clara Valley Water District are the wealthiest regions and the agencies most capable of undertaking aggressive regional water self-sufficiency actions. They should be further encouraged and assisted to do so through coherently formulated state and federal water policies and programs. 2-110

On the agricultural side, the Bureau and DWR's efforts appear to benefit mainly the few western San Joaquin Valley farmers whose contractual surface water rights have always been less reliable than most—and whose lands are the most problematic for irrigation. In excess of 1 million acres of irrigated land in the San Joaquin Valley and the Tulare Lake Basin are contaminated with salts and trace metals like selenium, boron, arsenic, and mercury. These lands should be retired from irrigation to stop wasteful use of precious fresh water resources. This water drains back—after leaching from these soils the salts and trace metals—into sloughs and wetlands and the San Joaquin River carrying along these pollutants. Retirement of these lands from irrigation usage would help stem further bioaccumulation of these toxins that have settled in the sediments of these water bodies. 2-111

The 2010-2011 Water Transfer Program would exacerbate pumping of fresh water from the Delta, which has already suffered from excessive pumping in earlier years of this decade. Pumped exports cause reverse flows to occur in Old and Middle Rivers and can result in entrainment of fish and other organisms in the pumps. Pumping can shrink the habitat for Delta smelt as well, since less water flows out past Chipps Island through Suisun Bay where Delta smelt often prefers. Our organizations share the widely held view that operation of the Delta export pumps is the major factor causing the Pelagic Organism Decline (POD) and in the deteriorating populations of fall-run Chinook salmon. The State Water Resources Control Board received word in early December that the Fall Midwater Trawl surveys for September and October showed the lowest abundance indices for Delta smelt, American shad, and striped bass in history. The index for longfin smelt is the third lowest in history. 2009 was the second consecutive year where no commercial fishing of fall-run Chinook fish will be allowed because of this species' population decline. While it is too early to know, 2010 could be the third straight year where no commercial fishing will be allowed, which would be unprecedented. Operation of the DWB at a time when others refrain from taking these fish and other organisms strikes us as a consummate unwillingness on the part of the State of California and the U.S. Bureau of Reclamation to share in the sacrifices needed to help aquatic ecosystems and anadromous fisheries of the Bay-Delta Estuary recover. 2-112

New capital facilities should be avoided to save on costly, unreliable, and destructive water supplies that new dams and canals represent. Moreover, these facilities would need new water rights; yet the most reliable rights in California are always the ones that already exist—and of those, they are the ones that predate the California State Water Project and the federal Central Valley Project. We should apply our current rights far more efficiently—and realistically—than we do now. California should instead pursue a "no-regrets" policy incorporating aggressive water conservation strategies, careful accounting of water use, research and technological innovation, and pro-active investments.[5] 2-113

III. Conclusion

The Bureau's EA/FONSI states on page 3-16:

> *California Water Code Section 1810 and the CVPIA protect against injury to third parties as a result of water transfers. Three fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.*

We unreservedly state to you that the draft EA/FONSI on the proposed 2010-2011 Water Transfer Program appears to describe a project that would fail all three of these tests as currently described. The 2010-2011 Water Transfer Program clearly has the potential to affect the human and natural environments, both within the Sacramento Valley as well as in the areas of conveyance and delivery. It is entirely likely that injuries to other legal users of water, including those entirely dependent on groundwater in the Sacramento Valley, will occur if this project is approved. Groundwater, fishery and wildlife resources are likely also to suffer harm as instream users of water in the Sacramento Valley. And the economic effects of the proposed DWB are at best poorly understood through the EA/FONSI. To its credit, at least the Bureau studied the proposed project, while DWR has completely avoided CEQA, thereby enabling the agency to ignore these potential impacts. 2-114

Taken together, the Bureau and DWR treat these serious issues carelessly in the EA/FONSI, and in DWR's specious avoidance of CEQA review. In so doing, they deprive decision makers and the public of their ability to evaluate the potential environmental effects of this Project, and violate the full-disclosure purposes and methods of both the National Environmental Policy Act and the California Environmental Quality Act.

[5] See especially, Pacific Institute, *More with Less: Agricultural Water Conservation and Efficiency in California, A Special Focus on the Delta*, September 2008; Los Angeles Economic Development Corporation, *Where Will We Get the Water? Assessing Southern California's Future Water Strategies*, August 2008, and Lisa Kresge and Katy Mamen, *California Water Stewards: Innovative On-farm Water Management Practices*, California Institute for Rural Studies, January 2009.

None of the signatory organizations to this letter received notice from the Bureau that this EA/FONSI had been released on January 5, 2010. With the Coalition's 2009 DWB comments on the EA/FONSI, we had the following request: *Our organizations request advance notification of any meetings that address this proposed Project or any other BOR projects in Butte, Colusa, Glenn, or Tehama counties that require consideration of NEPA/CEQA as well as water rights applications that will be needed as the 2010-2011 Water Transfer Program moves forward. Please add C-WIN, CSPA, BEC, and the Center for Biological Diversity to your basic public notice list on this Project, and send us each any additional documents that pertain to this particular Project.* While we do find record of a news release about the EA/FONSI on the Bureau's Mid-Pacific Region web site, we believe the Bureau has not met its obligations under NEPA for providing adequate public outreach to solicit review and comment of its environmental review documents in this matter. We learned of the Water Transfer Program on January 14th more than halfway through the review period set by the Bureau. Bureau staff rejected our request for additional time to review the documents, much to our disappointment. Please add our names and email addresses to all future environmental review news releases. 2-115

Sincerely,

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References Cited

Bureau of Reclamation 2006. Sacramento Valley Regional Water Management Plan. p. 5-8 to 5-10.

Butte Basin Water Users Association 2007. *2007 Butte Basin Groundwater Status Report* p. 23 and 30.

Butte Basin Water Users Association 2008. *2008 Butte Basin Groundwater Status Report*

Butte County 2007. Summary of Spring 07 Levels.

Butte County Department and Resource Conservation 2003. *Urban Water Demand Forecast*.

Butte County DWRC June 2007. *Tuscan Aquifer Monitoring, Recharge, and Data Management Project*, Draft.

California State Water Resources Control Board 2009. *GAMA Domestic Well Project, Tehama County Focus Area*.

California Water Impact Network, et al 2008. Complaint for Declaratory and Injunctive Relief.

CH2Mhill 2006, *Sacramento Valley Regional Water Management Plan*, Figure 1-4.

Dudley, Toccoy et al. 2005. *Seeking an Understanding of the Groundwater Aquifer Systems in the Northern Sacramento Valley: An Update.*

Dudley, Toccoy 2007. Letter to Lester Snow as presented to the Butte County Board of Supervisors as part of agenda item 4.05.

DWR 2006. *California's Groundwater – Bulletin 118*.

DWR 2008. Addendum to the Environmental Water Account Environmental Impact Statement/Environmental Impact Report

DWR 2009. Addendum to the Environmental Water Account Environmental Impact Statement/Environmental Impact Report

Fleckenstein, Jan; Anderson, Michael; Fogg, Graham; and Mount, Jeffrey 2004. *Managing Surface Water-Groundwater to Restore Fall Flows in the Cosumnes River*, Journal of Water Resources Planning and management, opening page of article.

Friend, Scott 2008. *City of Chico General Plan Update Existing Conditions Report;* Pacific

Municiple Consulting.

Glenn County. Board of Supervisors. California Ordinance No. 1115, Ordinance Amending the County Code, Adding Chapter 20.03, Groundwater Management.

Glenn County. Management Plan: Development of a Locally Driven Groundwater Management Plan Ordinance #1115. Accessed January 18, 2010 at: http://www.glenncountywater.org/management_plan.aspx.

Glenn-Colusa Irrigation District 2008-2009. *Initial Study And Proposed Negative Declaration Landowner Groundwater Well Program*.

Governor's Advisory Drought Planning Panel 2000. *Critical Water Shortage Contingency Plan*.

Hennigan, Barbara 2007. Testimony, Monterey Agreement hearing in Quincy, California. (http://www.water.ca.gov/environmentalservices/docs/mntry_plus/comments/Quincy.txt).

Hennigan, Robert 2010. Personal communication with Barbara Vlamis on January 17, 2010.

Hoover, Karin A. 2008. *Concerns Regarding the Plan for Aquifer Performance Testing of Geologic Formations Underlying Glenn-Colusa Irrigation District, Orland Artois Water District, and Orland Unit Water Users Association Service Areas, Glenn County, California*. White Paper. California State University, Chico.

Maslin, Paul E., et. al, 1996. *Intermittent Streams as Rearing Habitat for Sacramento River Chinook Salmon: 1996 Update*.

McManus, Dan; Senior Engineering Geologist, DWR Northern District on August 27, 2007, Personal communication with Jim Brobeck.

Mish, Kyran 2008. *Commentary on Ken Loy GCID Memorandum*. White Paper. University of Oklahoma.

Msangi, Siwa and Howit, Richard E. 2006. *Third Party Effects and Asymmetric Externalities in Groundwater Extraction: The Case of Cherokee Strip in Butte County, California.* International Association of Agricultural Economists Conference, Gold Coast, Australia.

Scalmanini, Joseph C. 1995. *VWPA Substatiation of Damages*. Memo. Luhdorff and Scalmanini Consulting Engineers.

Shutes, Chris et al. 2009. *Draft Environmental Assessment DeSabla – Centerville Project (FERC No. 803)*. Comments. California Sportfishing Protection Alliance.

Spangler, Deborah L. 2002. *The Characterization of the Butte Basin Aquifer System, Butte County, California*. Thesis submitted to California State University, Chico.

Staton, Kelly 2007. *Glenn-Colusa Irrigation District Aquifer Performance Testing Glenn County, California*. California Department of Water Resources.

USFWS 1999. Draft Recovery Plan for the Giant Garter Snake.

USFWS 2006. Giant Garter Snake Five Year Review: Summary and Evaluation.

USFWS 2008 Biological Opinion for Conway Ranch.

USFWS 2009 Biological Opinion for the Drought Water Bank.

January 18, 2010

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Re: Comments on the 2010/2011 FONSI – Water Transfer Program

Dear Directors Cowin and Glaser:

Butte Environmental Council (BEC) believes the 2010/2011 Water Transfer proposal (further referred to as Projects) and environmental documentation are significantly flawed threatening the health and viability of the northern Sacramento Valley. The very premise of the proposed water transfers oppose the mission statements of the Department of Interior, Bureau of Reclamation and the California Department of Water Resources by placing the greed of a few water suppliers before the needs and protection of the California public and the ecosystems that desperately require our attention. While water transfers are a necessary element of water management in a time of drought, this proposal is so flawed it is difficult even to begin to identify areas of concern. 3-1

Preponderance of poorly written and organized documentation

Those wishing to comment must review the following draft documentation:

- *2010-2011 Water Transfer Program Draft.* U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, January 2010. (Further referenced as BOR 2010.)
- *Draft Technical Information for Water Transfers in 2010*. Water Transfers Office, California Department of Water Resources and Resource Management Division of Bureau of Reclamation, Mid-Pacific Region, November 2009. (Further referenced as DWR 2009.)
- *Water Transfer Issues*, an online set of 16 issues each a couple pages in length. Found at the following address: http://www.water.ca.gov/drought/transfers/ – select the Water Transfer Issues link under the 2010 Water Transfer tab. (Further referenced as Issues 2010.)
- *2004/2008 Environmental Water Account EIS/EIR.* A compilation of 21 documents found on the BOR site: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=107. (Further referenced as EWA 2008.)

3-2

The environmental documentation that accompanies this proposal ignores the principles established to protect against injury to third parties outlined in the California Water Code Section 1810 and the CVPIA. These fundamental principles include (1) no injury to other legal users of water; (2) no unreasonable effects on fish, wildlife or other in-stream beneficial uses of water; and (3) no unreasonable effects on the overall economy or the environment in the counties from which the water is transferred. 3-3

The Projects must provide the appropriate reports that indicate independent scientific analysis that injury has not occurred from all previous water transfer projects. The analysis should show that these principles are upheld in all efforts to transport water out of the area of origin. It also must be recognized that 'new water' does not exist at the levels necessary to sustain the over committed supplies. 3-4

Environmental Assessment ignores legal rights of the environment and general public

It is not clear that the broader and most senior rights of the environment and all citizens of this state are foremost in this effort. Scientifically sound proof of no injury for senior rights holders for all in-basin users and uses must be provided before plans for a two-year program is approved. Proof includes an independent analysis of all data generated, reported, and collected for past water transfer programs. This EA outlines in detail the level of documentation required to participate in the Projects, but fails to provide adequate documentation that this data has ever been analyzed. There has been sufficient time and in fact there is so much data (DWR, NASA, USGS, GAMA, and EWA) proving that significant impact has and will occur and that we are not appropriately tracking potential for overdraft. 3-5

> *The Projects are junior to all lawful in-basin water use under the watershed protection statutes.*
>
> *The Projects must be assured that the water made available for transfer is new water that would not be in the system but for the transfer activity. …water supply to which their Project contractors are legally entitled is not unlawfully diminished by the transfer. (BOR 2010)*

Legal injury applies to all in-basin users including the environment; BOR and DWR efforts to protect said in-basin users should be tantamount to CVP/SWP contractors. 3-6

This data identifies the reported through-Delta transfers moving water from the northern Sacramento Valley to points south.

2000-2001	2001-02	2002-03	2003-04	2004-05	2009
243,806	481,576	251,876	165,088	104,974	274,285

Criteria surrounding groundwater substitution is flawed

Protection of water in tributaries of the Delta appears to be the only criteria present in the EA documentation. While it may be the Bureau's intention to protect the environment, the true intent appears to be protecting the junior rights of Project contractors. 3-7

> *When the Projects contract to convey transferred water through their facilities, or otherwise weigh in on proposed transfers, they must be sure that the water supply to which their Project contractors are legally entitled is not unlawfully diminished by the transfer. If it is diminished, it is effectively an involuntary and uncompensated transfer of someone else's water and constitutes legal injury.*

The following highlighted statement negates the meaning of groundwater substitution of agricultural water because water is not needed when streams are at their peak during the wet season. This alternative must be removed as it refers to blatant selling of groundwater for use other that at the point of pumping.

> *Because groundwater levels generally recover at the expense of stream flow, the wells used in a transfer should* ***be sited and pumped in such a manner that the stream flow losses resulting from pumping peak during the wet season****, when losses to stream flow minimally affect other legal users of water. Sellers would not be paid for pumped water that would result in stream flow losses during the pumping season. Reclamation assumes that stream flow losses due to groundwater pumping for transfers are 12 percent of the amount pumped for transfer (see Section 3.2 for more information).* 3-8

The 12% leakage from streams assumption is flawed because of the inherent hydrostratigraphic and geologic differences across the Sacramento Valley. Leakage is dependent on the local hydrogeologic conditions surrounding a pump and will vary well to well. Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage. DWR has documented that the Sacramento River's losing reach has migrated upstream from Grimes to Princeton. 3-9

The following references a very old report when in fact we have not had good recovery even during normal precipitation years. 3-10

> *Groundwater levels tend to decrease during the irrigation season and rebound in the wet winter months. A large portion of recharge in the basin is likely through percolation of natural runoff (DWR Northern District 2002). Because of the aquifer's relatively short recovery period and because the Proposed Action is only a two year program, transfers in 2010 and 2011 would likely have a minimal effect on long-term groundwater level trends. (BOR 2010)*

The Well Acceptance Criteria found in Table C-1 (DWR 2009) fails to mention Butte Creek as either a major or minor tributary of the Sacramento River affected by groundwater substitution. Butte Creek is the last tributary with wild-spawning Chinook salmon and their return numbers were dismal this past season. 3-11

At the very least, Table C-1 should be accompanied with a map of proposed sellers with a GIS developed overlay establishing that criteria is met under all circumstances and impacts of proposed wells can be better assessed. 3-12

Figure 3.2-1 Sacramento Valley Groundwater Basin inadequately reflects the subbasins surrounding and north of Chico. All Chico residents are dependent on groundwater, in fact 86% of Butte County residents have no alternative water supply. There are between 5-10k disparate domestic wells in Butte County alone. 3-13

> *The Projects export after all in-basin uses have been met.*
>
> *Surface water and groundwater interact on a regional basis, and, as such, gains and losses to groundwater vary significantly geographically and temporally. In areas where groundwater levels have declined, such as in Sacramento County, streams that formerly gained water from groundwater now lose water to the groundwater system through seepage.*

Conclusion

The Sacramento Valley is willing to share more of its water resources with other areas of the state if it will not harm the environment en route, if there are serious water conservation measures in receiving areas, and there is a commitment to protect the economy and the environment in areas of origin. In a demonstration of good will toward the people and environment of the northern Sacramento Valley, we propose that the Bureau and DWR undertake the following actions in concert with the proposed Projects: 3-14

- Shorten the proposed Projects to a one-year drought response until appropriate environmental review is preformed and submitted to public for review
- Remove the groundwater substitution component from the proposed Projects

- Remove the provision that allows the Projects to operate in years that contractors receive less than 100 percent of their allocation
- Initiate independent research by academics and the USGS in the northern Sacramento Valley
- Award the Sacramento Valley co-equal value with the bay-delta, the San Joaquin Valley and the metropolitan regions of the state
- Conduct project specific environmental review for the proposed Projects under the California Environmental Quality Act and the National Environmental Protect Act
- Promote policies that reflect an effort at decreasing demand as opposed to increasing dependency on waters that must pass through the Delta
- Notify signatories of all documents governed by the provisions of CEQA and NEPA

BEC also requests that the FONSI comment period be extended to the full 30 days as allowed by federal law. 3-15

Sincerely,

Carol Perkins
Butte Environmental Council, Water Resource Advocate

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January 19, 2010

Brad Hubbard
US Bureau of Reclamation
Division of Resources Management
2800 Cottage Way
Sacramento, CA 95825

Subject: Comments to Draft Environmental Assessment

Dear Mr. Hubbard:

The purpose of this letter is to provide our comments to the draft Environmental Assessment (Draft EA) for the U.S. Bureau of Reclamation's 2010-2011 Water Transfer Program (Program). Overall, we believe that the Draft EA is well prepared; and the following is a list of our comments, most of which are more editorial and others are questions for further clarification:

1. It is our understanding that the quantities identified in Table 2-1, page 2-4 for Cranmore Farms, Pelger Mutual Water Company, and Pleasant Grove-Verona Mutual Water Company are limited during July through September based on criteria under CVPIA. Should the quantities in Table 2-1 reflect an upper limit for these three potential sellers based on water that may be available for transfer during the entire period of May through September? 4-1
2. Where applicable, entities that hold Sacramento River Settlement Contracts with Reclamation should be identified as such. For example, see Cranmore Farms description identifying "contract", page 3-2 of Draft EA. 4-2
3. On page 3-3, the first sentence of Pelger Mutual Water Company's description should identify: "Pelger MWC *diverts surface water from* the Sacramento River…" 4-3
4. On page 3-3, the second sentence of Pleasant Grove-Verona Mutual Water Company's description should be deleted. The third sentence should identify: "Shareholders divert surface water from the Sacramento River and the Natomas Cross Canal under their individual water rights and pursuant to the Settlement Contract with Reclamation." 4-4

5. On page 3-3, the last sentence of Meridian Farms Water Company's description should identify: "Meridian Farms WC diverts surface water from the Sacramento River pursuant to its water rights and its Settlement Contract with Reclamation." 4-5

6. On page 3-19, the first sentence of Pleasant Grove-Verona Mutual Water Company's description should identify: "Pleasant Grove-Verona MWC holds a Settlement Contract with Reclamation on behalf of its shareholders for diversions from the Sacramento River and the Natomas Cross Canal; and could transfer up to 9,637 acre feet through groundwater substitution and/or 4,000 acre feet through cropland idling/crop shifting." 4-6

7. Should Figure 3.2-2 on page 3-23 identify Groundwater *Substitution* Pumping? 4-7

8. In regard to Table 3.2-2 on page 3-26, it is our understanding that a delineated wetland is considered a minor surface water feature, as identified in the Environmental Water Account EIS/EIR. 4-8

9. Should Figure 3.9-1 on page 3-65 identify Cranmore Farms and Feather Water District? Also, the leader for Sacramento River Ranch should be adjusted to the correct location. 4-9

10. Should Table 3.15-1 on page 3-100 include Feather Water District? 4-10

11. We continue to believe that the option for a forbearance type arrangement should be further evaluated and potentially available under the Program. In this way, water users would elect not to divert surface water and allow this water to be picked up under Reclamation's water rights. The same physical actions are occurring with or without forbearance; and therefore, we believe the draft EA may cover a forbearance arrangement as well. We understand Reclamation staff believe it is no longer an option due to associated costs. We will await the material that Mr. Rust indicated would be provided by Reclamation to support its position. 4-11

Please call if you have any questions or require additional information.

Sincerely,
MBK ENGINEERS

Darren Cordova

DC/pp
5143.010/BRAD HUBBARD 2010-01-19.DOC

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January 18, 2010

Mr. Donald R. Glaser
Regional Director
Mid-Pacific Region
Bureau of Reclamation
Sacramento, California 95825-1898

Re: Water Transfer Proposal

Dear Mr. Glaser:

We write as counsel for Bank of America, N.A., as successor to U.S. Trust Company, trustee of the Vecchioli Family Trust (the "Trust"), owner of approximately 1,309 acres of irrigated crop land and related interests (the "Property") in the Camp 13 area of Central California Irrigation District ("CCID"). Unless properly drained, the Property is subject to severe salination and waterlogging. The temporary drainage measures now in place are expected to terminate in the near future. No agency with responsibility to provide drainage to the Property has yet provided an effective and permanent solution to this serious problem. Thus, the Trust believes that it must now look to the alternative of selling, leasing, or otherwise transferring its interests in water or water rights, as authorized by Section 3405(a) of the Central Valley Improvement Act of 1992 (the "CVPIA"), in order to protect its investment and mitigate its losses. 5-1

The Trust, faced with the drainage threat, has carefully considered its possible courses of action and the benefits and detriments of each. It has concluded that a transfer of its interests in water rights is the optimal solution to the danger posed by lack of drainage. To date, the Trust has not only employed this firm as counsel but has also employed Rodney Smith, a leading water economist and expert on water transfers, to advise it in connection with contracting with a suitable buyer or lessee and seeking any governmental approvals required by law.

In this letter, we set forth certain background information relating to (a) the statutory responsibility of the Bureau of Reclamation (the "Bureau") to provide drainage service to the west side of the San Joaquin Valley, (b) the drainage responsibilities of CCID, (c) the Trust's interests in reserved waters, and (d) the Trust's interests in substitute waters. We also respectfully request that the Bureau official or office in charge of CVPIA water transfers provide the Trust with certain preliminary information relating to (e) the Bureau's implementation of the water transfer provisions of the CVPIA and (f) other agencies that might be involved in such transfer.

(a) Bureau's Drainage Duties

The second sentence of Section 1(a) of the federal San Luis Unit Act (the "1960 Act") provides that the principal engineering features of the San Luis Unit (the "Unit") of the Central Valley Project (the "CVP") shall be various irrigation water diversion and conveyance facilities and "necessary...drains." The Property lies just north of the Unit. Furthermore, Section 5 of the 1960 Act provides that, in constructing, operating, and maintaining a drainage system for the Unit, the Bureau is authorized to permit the use of the drainage system by other parties and to participate in construction and operation of drainage facilities designed to serve the general area of which the lands to be served by the Unit are a part, to the extent the Unit works contribute to drainage requirements of that general area.

CCID and other members of the so-called "four entities," including Firebaugh Canal Water District ("Firebaugh"), have on several occasions taken the lead in enforcing the drainage provisions of the 1960 Act. In the 1960s, CCID and Firebaugh twice sued the Bureau to compel performance of its drainage duties under the 1960 Act and, each time, the Bureau assured the court that drainage would be provided.

In the late 1960s and the early 1970s, the Bureau constructed the middle portion of an interceptor drain as well as a portion of the Unit's collector drainage system. But then the Bureau abruptly stopped any further construction.

In the *Barcellos* case, which was litigated between 1979 and 1986, farmers in a large water district in the Unit sued, among other things, for a declaration of certain of the Bureau's statutory duties relating to drainage. The resulting stipulated judgment directed the Bureau to submit a drainage plan meeting certain criteria by 1991. The Bureau submitted a plan by that date, but the court held that it did not meet the required criteria.

In the meantime, CCID and Firebaugh had also sued the Bureau for a declaration of its drainage duties under the 1960 Act. In 1991 farmers and the district in the Unit did the same thing. The two cases were then partially consolidated. In 1993 the court granted the plaintiffs' partial summary judgment, holding that the second sentence of Section 1(a) of the 1960 Act unambiguously mandated the construction of necessary drains and gave rise to the Bureau's duty to provide drainage. After a three-week trial on the Bureau's alleged excuses for violating the statute, the court issued findings of fact and conclusions of law in 1994 and a partial judgment in 1995 affirming the above holding and rejecting the Bureau's exeuses. The judgment was affirmed by the Court of Appeals for the Ninth Circuit in 2000. *Firebaugh Canal Co. v. U.S.*, 203 F. 3d 568 (9th Cir. 2000). Later that year, the trial court issued an injunetion compelling the Bureau to provide drainage promptly. In 2002, CCID and Firebaugh and the Unit district and farmers filed motions to enforce the judgment. But before those motions were heard, the Unit district and farmers reached a financial settlement with the Bureau. We are not aware that the enforcement motion brought by CCID and Firebaugh has ever been heard by the court.

In our view, the Bureau is bound by the 1960 Act, as interpreted by the courts, and the 2000 injunction to provide drainage to Unit lands. Draining Unit lands, as required, would significantly benefit the Property. And providing drainage service to the Property, as authorized by Section 5 of the 1960 Act, 5-2

would solve the Trust's problem. The Bureau's failure to comply to date with its drainage responsibilities may be explained in part by the fact that the injunction remains unenforced.

(b) CCID's Drainage Duties

The California Irrigation District Law (the "Law"), by which CCID is governed, contains several provisions about drainage. In particular, Section 22095 of the Law authorizes a district to provide for drainage made necessary by its irrigation. Furthermore, Section 22098 provides, as follows: "Whenever it appears necessary to drain any land within a district on account of the irrigation which has been done or which is intended to be done by the district under laws relating to it, whether for the purpose of more beneficially carrying on the irrigation or to protect the district from liability by reason of the irrigation, its board, if it is reasonable from an economic standpoint that the drainage be provided, shall provide for the drainage."

Under these and related statutes, an irrigation district has a clear mandatory duty to provide drainage made necessary by operation of its irrigation system. *Elmore v. Imperial Irrigation District*, 159 Cal. App. 3d 185 (1984).

In the Trust's view, it is necessary to drain the Property for the purposes stated, and doing so is reasonable from an economic standpoint. Therefore, the provision of drainage to the Property by CCID is not only authorized but required. But, unfortunately, to date, CCID, like the Bureau, has not provided the permanent and effective drainage the Property requires. 5-3

(c) The Trust's Interests in Reserved Waters

The Trust claims certain interests in the "reserved" waters historically used by CCID farmers.

Prior to 1939, the Property was owned by Miller & Lux, Inc. ("Miller & Lux"). The pre-1914 water rights serving the Property were owned by the San Joaquin Canal Company (the "Canal Company"). We understand that Miller & Lux was the principal shareholder in the Canal Company.

In 1939 the Bureau and Miller & Lux entered into the Purchase Contract. It made clear that the water used on croplands was reserved to and for the benefit of certain water companies, including the Canal Company.

Thereafter, the Property was acquired by the Trust. At or about the same time, we understand, CCID acquired certain interests of the Canal Company.

The right to use water under such an appropriative right is appurtenant to the irrigated land. *Nicoll v. Rudnick*, 160 Cal. App. 4th 550, 558 (2008). However, such a right is freely transferable. *North Kern Water Storage District v. Kern Delta Water District*, 147 Cal. App. 4th 555, 559 (2007).

Various state statutes have been enacted promoting water transfers. For example, in 1979 the California legislature provided that water, or the right to the use of water, the use of which has ceased or been reduced, may be sold, leased, or transferred. Water Code §1011(b). In 1980 the legislature declared that it

is state policy to facilitate the voluntary transfer of water and water rights, and it directed state agencies to encourage voluntary transfers thereof. *Id.* at §109. Various other such water transfer statutes were enacted by the legislature thereafter. *E.g., id.*, at §§ 470 et seq., 1725, 1735, 1745 et seq.

Thus, we conclude that the Trust may transfer its interests in the reserved waters, and that the relevant agencies should encourage such transfer. 5-4

(d) The Trust's Interests in Substitute Waters

The Trust also claims certain interests in the "substitute" waters currently used by CCID farmers.

In 1939 the Exchange Contract was executed by the Bureau and the Canal Company and the other canal companies. The Exchange Contract was amended in each of 1956, 1963, and 1967. For almost 60 years, the Bureau has supplied the Trust with CVP water from the Delta-Mendota Canal pursuant to the Exchange Contract.

Article 4(a) of the Exchange Contract, as amended, provides that the Bureau may divert and use reserved waters so long as it delivers to CCID and the others substitute water from the CVP under Article 8 of the Exchange Contract.

As you know, under the proviso of Section 8 of the Reclamation Act (the "1902 Act") the right to the use of reclamation project water is "appurtenant" to the land irrigated. 43 U.S.C. § 372. Section 8 of the 1902 Act also provides that the Bureau shall proceed in conformity with state laws relating to the control, appropriation, use, or distribution of water used in irrigation. 43 U.S.C. §383. The U.S. Supreme Court has repeatedly held that landowners hold a beneficial and equitable interest in federal project water rights. *E.g., Nevada v. U.S.*, 463 U.S. 110, 126 (1983); *Bryant v. Yellin*, 447 U.S. 352, 371 (1980).

Article 2 of the Exchange Contract, as amended, provides that the Bureau shall operate the CVP in accordance with the priorities of purposes as specified in the CVP Authorization Act of 1937 (the "1937 Act") and acts amendatory thereto and supplementary thereof. The 1937 Act was amended in 1992 by the CVPIA. Section 3402(d) of the CVPIA provides that one of its purposes is to increase water-related benefits provided by the CVP to the state through expanded use of voluntary water transfers. In particular, Section 3405(a) thereof provides that "all individuals...who receive Central Valley Project water under...exchange contracts...are authorized to transfer all or a portion of the water subject to such contract to any other California water user or water agency...for...any purpose recognized as beneficial under applicable state law."

Thus, we conclude that the Trust's interests in substitute water may also be sold, leased, or otherwise transferred to other California water user for any beneficial purpose. 5-5

(e) Implementation of CVPIA Water Transfers

We have carefully studied Section 3405(a) of the CVPIA and believe that it clearly authorizes the Trust to transfer its interests in the above water rights to any other California water user for any beneficial purpose. Indeed, we believe that such a transfer would be especially compelling where property, such as the Property owned by the Trust, is threatened with ruination as a result of a failure to provide required drainage

service.

We have also reviewed the Bureau's Interim Guidelines For Implementation of the Water Transfer Provisions of the CVPIA, dated February 25, 1993 (the "Interim Guidelines"), as well as the Bureau's CVPIA Administrative Proposal on Water Transfers, dated April 16, 1998. Based on such reviews, we believe that the Trust could present to the Bureau for its review and approval a proposed water transfer. Indeed, the Trust intends to do just that. 5-6

We respectfully request that the Bureau official or office responsible for reviewing and approving any such transfer proposal advise us as to any other requirements the Trust needs to meet or any other information the Trust needs to know.

(f) Role of Other Agencies

Naturally, it is a major objective of the Trust, in connection with any water transfer, to minimize, to the extent feasible, the time and cost to be incurred in seeking and obtaining any required government approvals, including the review and approval by the Bureau under Section 3405(a) of the CVPIA. This is one reason for writing to the Bureau at this time.

It is our understanding that, under Section 3405(a), CCID would play no formal role in review and approval. However, please know that, by letter dated October 27, 2009, we have advised CCID of the Trust's views and intentions. We acknowledge that CCID and its landowners have significant interests in any water transfer by any one of its landowners. But, especially because the Property does not enjoy permanent and effective drainage, we anticipate cooperation between the Trust and CCID.

Section V(R) of the Interim Guidelines provides that certain transfers will require prior approval by the State Water Resources Control Board (the "Board"). We currently understand that transfer of the Trust's interests in the reserved waters requires no such approval but that transfer of the Trust's interests in the substitute waters may so require. We intend to contact the Board in the near future to review any procedures that may be applicable.

Conclusion

The Trust finds itself in an untenable position; a favorable sale or lease of its interests in the reserved and substitute waters may be its only means of mitigating the losses it will suffer as a result of ruination of the Property for lack of drainage. The Trust looks forward to working with the Bureau's water transfer officials to carry out the relevant purpose and the provisions of Section 3405(a) of the CVPIA. We respectfully request that such officials contact us so that the Trust can be sure to present for review an approvable proposed transfer.

Finally, a copy of this letter has been submitted to Mr. Brad Hubbard, Bureau of Reclamation (email: bhubbard@usbr.gov) in connection with the Bureau's recent Draft EA/FONSI for the 2010-2011 Water Transfer Program. We understand that it is the intent of that program that the Bureau will help make possible 5-7

water transfers from willing sellers to buyers in the state that are experiencing water shortages in 2010 and 2011. We believe that our clients are potential participants in such program and may add substantially to its viability.

Very truly yours,

Theodore A. Chester, Jr.

TAC:jjd

cc: Central California Irrigation District
Bank of America, N.A.